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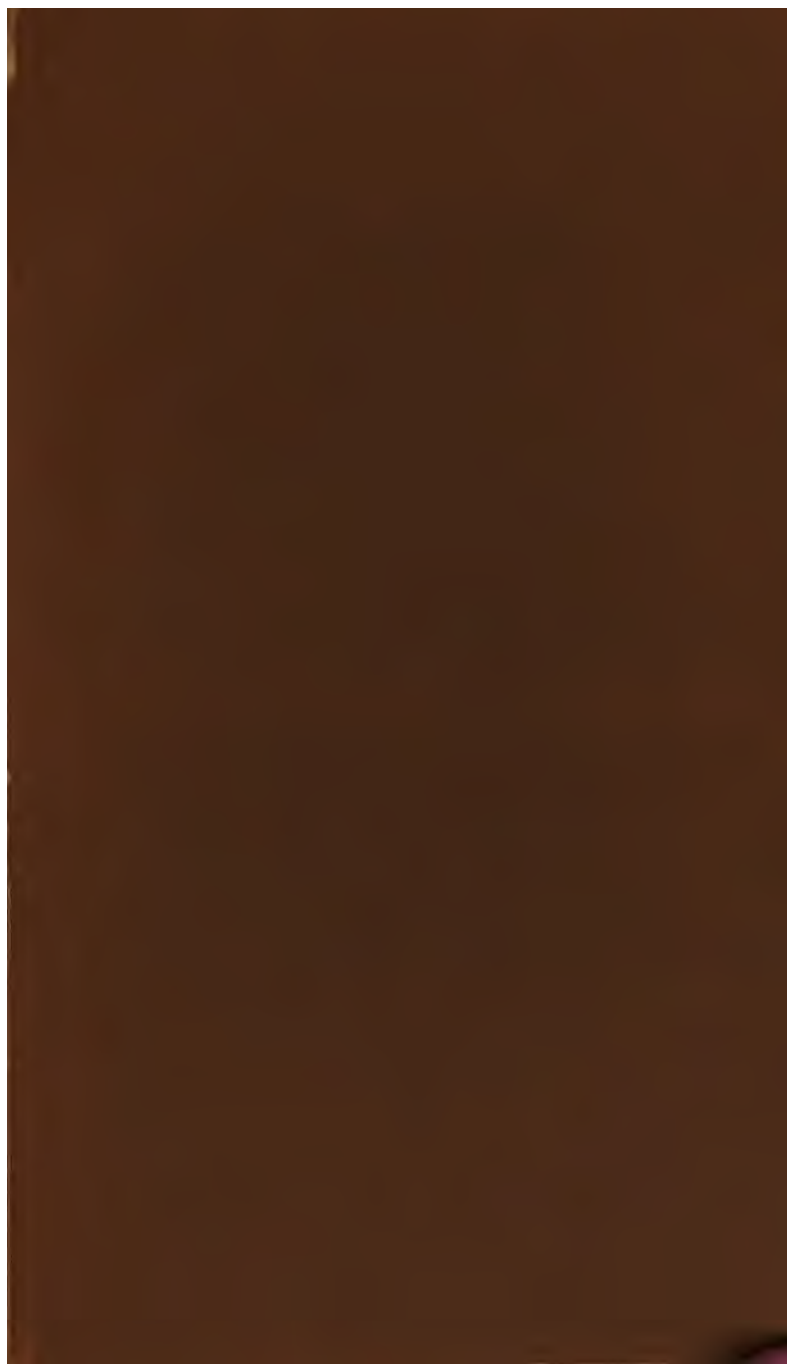
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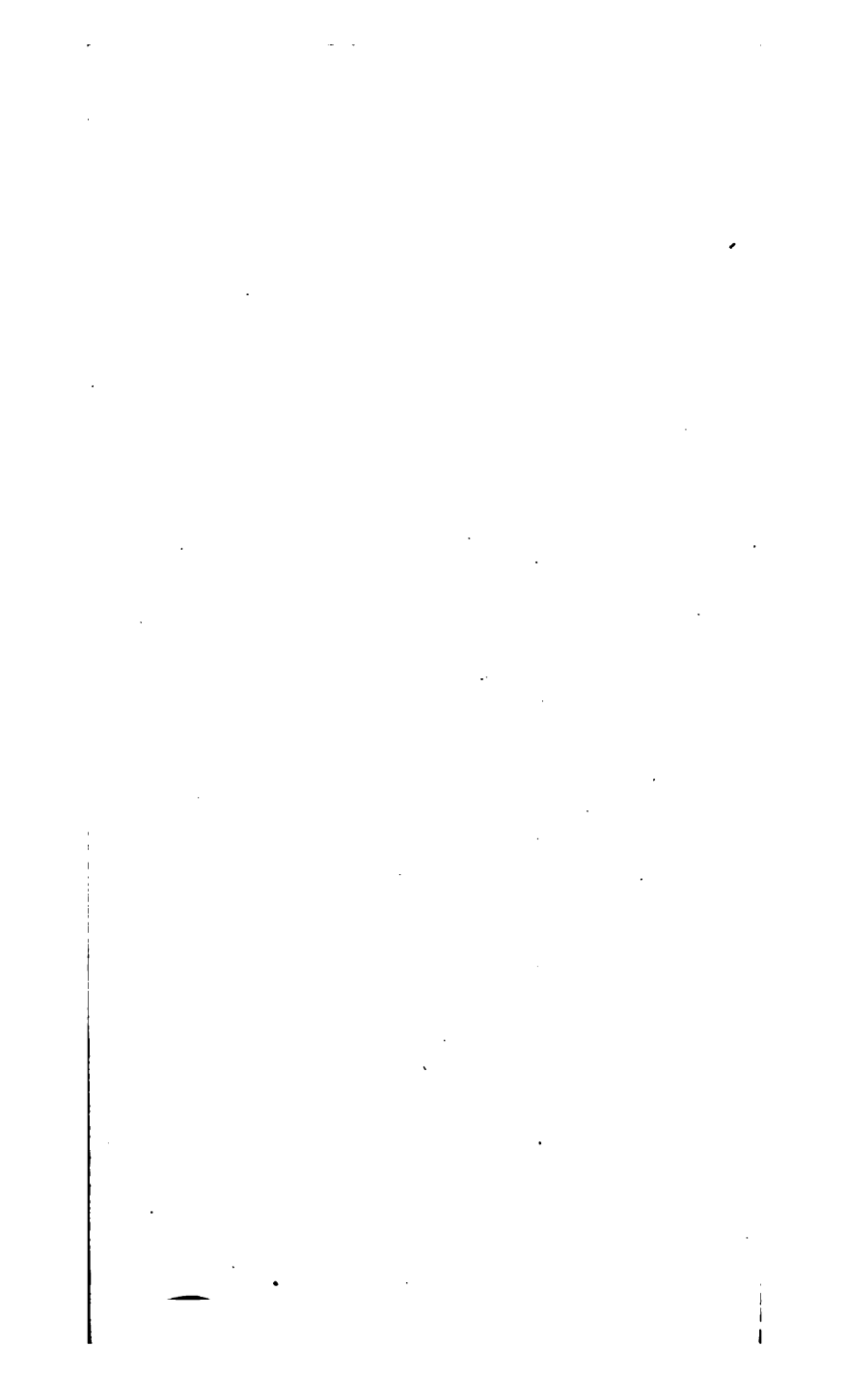
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PRINCIPLES

OF THE

MINOR OPERATIONS OF WAR.

TRANSLATED FROM THE FRENCH

OF

A. LALLEMAND.

BY

ST. VINCENT TROUBRIDGE,

MAJOR 7TH. ROYAL FUSILIERS.

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TRANSLATOR'S PREFACE.

IN offering to the notice of my brother officers this translation of portions of M. Lallemand's Work, it is right to explain that those chapters only have been given which contain the *Principles* of the "Minor Operations of War," because the other chapters refer almost exclusively to the plates accompanying the original work, and the publication of these would be attended with considerable expense.

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A THEORETICAL AND PRACTICAL TREATISE
ON THE
MINOR OPERATIONS OF WAR.

INTRODUCTION.

MILITARY writers, in treating of the science and art of war, have pursued different plans. Some have laid down principles confirmed by experience, and have applied them to operations founded on historical facts; others have invented systems, basing them on hypothetical combinations, and on a series of arbitrary cases.

The first method is instructive, of the highest interest, and, above all, fertile in results; the second is faulty, leads to error or uncertainty, and renders it difficult to distinguish facts from what has only an imaginary existence.

It is remarkable that amongst the numerous military works published in France, there is none which treats specially, and in a satisfactory manner, of the "Minor Operations of War," that is to say, of those, which, intimately connected with grand military operations, precede, accompany, and follow them. The examples brought forward in this Treatise will demonstrate the accuracy of this definition.

Persuaded that a work on this branch of the science of War, would not only be useful to young Officers, but would moreover possess an interest for those who took an active part in the military events which signalized the Revolutionary war, I conceived the project of preparing a Treatise on the subject; laying down first the principles connected with my proposed object, and then applying these principles to operations having immediate reference to them.

I have consulted the best military works, both French

and foreign, particularly those having most analogy with the subject of which I had to treat; and in order to render more exact the application of the principles laid down, and to inspire more confidence in them, I have drawn the examples which support them from amongst those "Minor Operations" in which most skill has been shown in the conduct of both parties, and above all, from those which occurred in the most recent campaigns in France, Germany, Italy, Switzerland, the Tyrol, &c., accompanying each with a topographical plan of the ground which served as the theatre of each operation.

I have thought this method more likely than any other to engage usefully the attention of Officers, as it is calculated to impress deeply on their minds positive rules, the soundness of which is attested by a series of historical military events. These documents, as well as the reflections and observations which accompany them, are prepared with the experience I have gained in twenty years of actual warfare.

What particularly distinguishes this Treatise is, that the principles it contains are practically demonstrated on every description of ground. Seventeen chapters are devoted to laying down the Principles*, and forty-two to their application; these last are accompanied by forty-two topographical plans, on which the troops engaged are represented by coloured parallelograms, the different tints indicating the side to which they respectively belong.

Officers who are anxious for instruction, and who seek to rise above the mere mechanical part of their profession, will, I think, find in this Treatise a guide capable of enabling them to act with decision in the different situations in which they may themselves be placed in war; an acquaintance with it may save them from painful dilemmas, and in short may enable them, profiting by the experience of those who have preceded them in the career of arms, to serve with increased advantage their king and country.

* The Principles only are here translated.

1. *On Out-posts.*

OUT-POSTS have a double object,—the safety of the corps which establishes them, and the observation of the enemy's troops. They should consequently be so posted that they may not only perceive the movements and approach of the enemy, but may, moreover, in case of attack, be enabled to arrest his progress, and give the troops which they cover, time to get under arms and make their dispositions for defence.

When the army is covered by its advanced guard, the Out-posts form an external chain to cover the latter; and when the advanced guard is encamped with the army, as sometimes occurs, the chain of out-posts should be immediately beyond the camp: in either case the mode of posting them is always the same.

The nature of the ground decides the class of troops of which the out-posts should be composed.

In an open country, they should be composed of cavalry; in a broken country, of infantry and cavalry; and in a very rugged country, of infantry alone; except in cases where a few mounted men should be given as orderlies. The nature of the ground also decides the distance to be left between the line of the out-posts, and that of the main body. Were this distance too great, the out-posts might be carried off before relief could reach them: were it too small, the principal object, namely, the safety of the army, would not be attained.

On these considerations, we may fix on three-quarters of a league (about two miles) as an average distance to be kept between the line of the most advanced posts and the main body; bearing in mind that this distance should be increased the night after an action; and also whenever it may be requisite to hold a post for a considerable period, in order to avoid harassing the troops by keeping them constantly under arms.

The extremities of the line of out-posts should find points of "appui" in the nature of the ground, and should overlap both flanks of the position of the army, so as to occupy and observe all the avenues by which the enemy might advance. In default of points of "appui," the extremities of the line of out-posts should be thrown back towards the army; and in this case, for greater safety, picquets of cavalry or infantry, according to the nature of the country, should be thrown out to their front and flanks, in order to observe and reconnoitre by means of frequent patrols, all the ground under their surveillance.

The line of out-posts should have some natural obstacles in its front; and to these, and the difficulties of the ground, should be added the resources presented by field fortification.

When the line of out-posts is not covered by any natural obstacles, the vigilance of the posts and the activity of the patrols must supply that safety which is denied by local resources.

If the out-posts have a double object, the troops of which they are composed have also a double vocation, namely, to observe the enemy, and to obstruct his progress.

As soon as the line of the out-posts has been determined, the troops of observation are established there. These troops should be distributed on the most important points of the line, and particularly on those from which the out-posts may be best able to command a view of the country, as well as of the approaches open to the enemy's army, assigning to each arm, the ground most suited to the nature of its service.

Troops of observation are divided into grand-guards or rallying posts, and advanced posts.

The grand-guards are established under cover, as far as the ground will allow, in hollows, behind heights, embankments, brushwood, dykes, streams, and, more particularly, on each of the directions leading towards the enemy.

They should detach to their front and flanks, at a dis-

tance of about 200 paces, advanced posts, the strength of which should not be more than one-third of their own. These posts are to furnish the videttes, or sentries, who form the outer chain; and their strength should be calculated in the proportion of four men for each vidette or sentry.

This chain should embrace a larger extent of ground than the line occupied by the advanced posts; and should be from two to three hundred paces in front of the latter.

The videttes, or sentries, forming the outer line, should be so posted as to be able to see each other, in order that the enemy may be prevented from slipping between them and the advanced posts, thus breaking the chain which would soon be destroyed if taken in flank.

The communication between the outer chains and the posts should be kept up by frequent patrols, more particularly during the night and at day-break. These patrols should be so vigilant as to prevent anything from passing the posts without being discovered.

The grand-guards should never be separated from the advanced posts by obstacles, such as streams, marshes, steep ravines, or defiles. They should both be posted on one side or the other of such obstacles; but it is advisable to have them in their front when this can be done without breaking the connection of the different parts of the line.

The second object of out-posts is to gain time. It is on this account that they should consist of detachments sufficiently strong to resist the first attack of the enemy, and sustain a combat. These detachments which are called posts of "appui," should be composed of infantry, cavalry, and artillery; distributed with regard to the nature of the ground and the strength of the main body.

The posts of "appui" should occupy those passes by which the enemy might advance with facility; and particularly those where the ground would permit of a certain amount of resistance, such as defiles, villages, or points where several roads cross.

A strong detachment should be stationed at any weak point between the army and the posts of "appui," as much to cover their retreat as to prevent the enemy from seizing the point by a flank march. Should the line of the posts of "appui" be too extended, it would be advisable to establish intermediate posts to connect them, and also to facilitate the transmission of orders and reports.

In order to enable the posts of "appui" to resist the enemy as long as possible, the openings towards his position should be narrowed, his points of attack should be circumscribed, and those only left open where the difficulties of the ground are most formidable.

The posts of "appui" should not be too far in rear of the grand-guards, because they are intended to rally them, and cover their retreat; neither should the main body be too far from the posts of "appui," lest they should not be able to fall back without compromising their safety.

Supposing the greatest distance between the main body and the line of advanced posts to be about three miles, that between the posts of "appui" and the main body should be about a mile and a half.

The posts of "appui" should be established on a line corresponding to the general direction of that occupied by the grand-guards.

Although the posts of "appui" are covered by the grand-guards, it is not the less necessary for them to throw out on the flanks of these guards smaller posts, as much for their own safety, as to cover the retreat of the posts established in the first line.

The commander of the advanced corps, should take post with his artillery and the main body of his force, on the central point of the line of posts of "appui;" the safety of the out-posts and even of the advanced corps often depends on the selection of this position.

As soon as the advanced posts, the grand-guards, and the posts of "appui" are in position, they should be made acquainted with the place of rendezvous, the routes they

must follow to reach it, and the ground they should occupy.

The exterior chain of sentries and videttes should occupy, as has been already said, a line much more extensive than that of the advanced posts; the advanced posts a line more extended than that on which the grand-guards are established; and the latter one more extended than that occupied by the posts of "appui." These last being intended to support the advanced posts, and to guard the principal approaches leading to the position of the army, should be more concentrated, by which means they will be enabled more easily to afford each other mutual support, and to resist with success the efforts of the enemy.

The amount of resistance to be made by any post, should always be determined with regard to the object in view; and should be proportioned to the importance attached to the occupation of the post.

As soon as the videttes or sentries have made known by signals the approach of the enemy, and they perceive that he continues to advance, they should fall back on the advanced posts; and as soon as these have called in all their videttes or sentries, they retire on the grand-guards, which, in their turn, after having rallied all their detached posts, and ascertained that a considerable body is advancing, and not merely a patrol of the enemy, retire on the posts of "appui," skirmishing, and retarding as much as possible the advance of the assailants, without however compromising their own safety.

The posts of "appui," which have got under arms on the first alarm, do not retire until they have recalled and assembled all the detachments on their front and flanks. These posts should offer a vigorous resistance, not only to oblige the enemy to show his strength and real intentions, but also to enable the advanced corps and the army itself to get under arms, and to make such dispositions as are in their power, and the circumstances of the case may demand.

The officer commanding the whole force should alone decide if it is necessary for the out-posts to make an

obstinate resistance, although the numerical strength of the enemy may be superior to his own. In an infinity of cases this becomes necessary; for instance, the commander may desire to gain time for the purpose of effecting some offensive movement without the knowledge of the enemy; or again, deeming it indispensable to retire, he may wish to mask his retreat, and to keep the enemy's forces at a sufficient distance to prevent them from harassing him, &c., &c.

It is for this reason, that in either case, the out-posts should be sufficiently strong to be able to resist the enemy, and keep him in check without running too great a risk.

Such are the general rules and details which should be observed in the composition and distribution of the out-posts, and in the selection of ground with reference to the position of their lines.

2. *On Patrols.*

PATROLS are of two sorts,—offensive and defensive.

Defensive patrols, as we have already remarked, are charged with the safety of their posts, and are to assure themselves that nothing can pass between their intervals without being discovered. These patrols need not consist of more than three or four men, as they have only to act a passive part; and should not advance more than very short distances beyond the chain of videttes.

Offensive patrols, on the other hand, should be composed of a larger number of men, and this number should be regulated less with regard to the nature of the ground than to its extent and depth. For example, a patrol whose force amounts to twelve or fifteen men, will suffice to explore a country some leagues in depth. Whereas, were the country the same number of leagues in breadth, forty or fifty men would be necessary.

The object of offensive patrols is to explore the position of the enemy, to watch his movements, to reconnoitre his forces, as well as the nature of the ground, and the distance that must be traversed in order to reach him.

From this summary may be seen what precautions are necessary in order to accomplish these operations. The importance attached to them, the obstacles and difficulties presented by the distance from the enemy, the necessity of relying solely on the capacity and courage of the leader, are so many considerations which should be taken into account in selecting the officer to command a patrol charged with a reconnaissance of the enemy. This officer should use every possible means to obtain the required information without being impeded by the enemy.

It is only from the nature of the ground and the object in view, that the description of troops and number of men can be determined, which should compose the patrols. When, for instance, operations are carried on in an open or slightly broken country, and the distance to be traversed before reaching the enemy, or the point to be reconnoitred, is great, the patrols should be composed entirely of cavalry; whereas, in mountainous countries, or in short, whenever the communications are few and difficult, and where the patrols have but a small extent of ground to pass before reaching the vicinity of the points proposed to be examined, they should consist of infantry. There are cases where it would be advisable to add a few mounted men; because these can, if necessary, pass rapidly from the head of a patrol to its flanks, and may connect more closely several different patrols.

Officers commanding patrols, which are to be pushed to considerable distances, will find many advantages in having a special map of the country to guide them. These officers should take note of the principal points towards which they direct their march; and should observe with the most scrupulous attention the country they traverse; so that in the event of falling in with the enemy in an unfavourable situation, they may (since this description of patrol should

endeavour to avoid an engagement) fall back without loss of time on more advantageous ground. They should also take the precaution to procure guides; and make what use they can of the inhabitants of the country, being careful to divert the attention of the latter from the real object in view, by putting questions on entirely different subjects.

Before deciding on the precise order of march of a patrol charged to explore a certain extent of country, we must previously know:—1st The numbers and composition of the patrol; 2nd The nature of the ground to be traversed; 3rd The considerations due to the weather and the season; 4th The object proposed to be attained.

This information being acquired, the following is the substance of the principal rules to be attended to:—1st In every movement, it is necessary to be extremely circumspect; 2nd The march should be covered and protected without too great a separation of the troops; 3rd The flanks and rear must be well reconnoitred; 4th Care must be taken not to allow the patrol to be cut off; 5th All the defiles to be passed must be carefully reconnoitred by men sent on in front for that purpose; 6th Every possible use must be made of the information derived from the inhabitants; 7th Should a forest have to be traversed during the night, certain signals must be agreed on beforehand; Lastly, The greatest attention must be given to every thing that occurs: the barking of dogs, fires lighted or extinguished, any noise or cries on a road, deserve the attention of every leader of a patrol. He should see every thing himself as far as possible; and before trusting to any new intelligence, he should obtain information from different quarters. Should any prisoners be taken, although this is never to be attempted by engaging the enemy, their statements must be compared with those received from other sources. In operations of this description, too much timidity would be as bad as too much audacity.

Attacks and surprises must be avoided by all possible means. Those roads must be preferred by which the move-

ments may be concealed from the enemy, and more particularly those which present at the same time the means of escaping him, and continuing the march in safety.

It is in operations of this description that presence of mind, reflection, cunning, prudence, and audacity must be employed simultaneously or in turn, according to circumstances: for, however detailed may be the instructions given to the officer commanding a patrol charged to explore a country, or to push on to the advanced posts of the enemy, they can never embrace beforehand all the situations in which he may be placed by a thousand unforeseen events.

Such are, in part, the general principles which should guide all officers charged with the management of a patrol intended to beat the country and work up to the line of the enemy's advanced posts.

3. *On Reconnaissances.*

OF the different branches constituting the science of war, that of military reconnaissances is one of the most essential; and officers of all classes, without exception, cannot take too great pains to make themselves skilful in it; not only because the results of reconnaissances enter into the combinations of all military operations, which can not or ought not to be decided on without a previous knowledge of the ground on which it is proposed to act, but also on account of the intimate connection which this branch has with tactics and strategy.

The knowledge of a country must be distinguished from that of ground: the first has for its object, to obtain general information of the nature of the principal local features, such as rivers, marshes, woods, mountains, high roads, and fortresses; and of the resources, such as corn, forage, and

cattle, to be found in the country about to be the seat of war, so as to be able to decide what means may best be employed to effect the necessary dispositions for conducting the campaign.

A reconnaissance of ground consists in studying, in the most minute detail, each particular locality, in order to regulate the execution of the minor operations of the war.

Knowledge of a country may be acquired by the study of maps, with the aid of descriptive notes; but ground can only be thoroughly known by being traversed in every direction, without overlooking the smallest details, and considering them always in a military point of view.

A general acquaintance with a country leads to and facilitates a more particular knowledge of the ground.

Before commencing operations, it is indispensable to have certain and extensive information respecting the country which will be the theatre of the war, on which to base the general plan of the war and the campaign.

Good maps are sometimes sufficient to allow of a project being determined on beforehand; but when it is a question of regulating details and particular operations, the ground on which it is proposed to execute them should first be well studied.

One of the principal objects of reconnaissances is to obtain information, from which descriptive and detailed notes may be prepared, and annexed to maps; these notes, explaining all the details of a country, will supply what the drawing or engraving is incapable of showing.

From what has been said it may be deduced, that, although a knowledge of that particular part of a country where operations are carried on may be sufficient for the general and for the other officers employed there, yet, in order to decide on the plan of a war, or even of a campaign, and to be able effectually to check the projects of the enemy, not only must the country occupied be known, but that also which it is proposed to penetrate, and those which adjoin it in every direction, so as to allow of considering well beforehand

what projects will suit the circumstances, and what may be applicable to all the different possible hypotheses.

In studying a country, or a portion of ground, it must first be considered whether, as a whole, it will answer for the desired object; and, afterwards, all its different parts must be examined in the most minute detail: 1st As to their individual forms; 2nd As to the connection existing between them. By these two operations it becomes more easy, from a simple inspection of the ground, to seize quickly and to judge with precision of all its capabilities and local peculiarities, considered in a purely military point of view: thus may be known the advantages and inconveniences of a position—an aptitude for which knowledge is acquired only by practice, and is improved and perfected only by constant exercise, as far at least as relates to judging distances with accuracy, a most important point in war.

It is very desirable to be able to form a correct estimate of distances at a glance; and this becomes easy by constantly comparing known and measured distances with others, and then verifying the judgment formed by an exact measurement; for instance, it is important to be accustomed to judge how many battalions or squadrons in line a portion of ground will contain. For this purpose, the extent of front of a battalion being known, a piece of ground must first be measured, in order to familiarize the eye with the required space, and after having endeavoured to judge the distance on other ground, it will be seen by measurement what error has been made.

Thus may be learned by degrees the art of appreciating distances and local dimensions, with the accuracy necessary for actual practice; but as a couple of square leagues may present a great variety of positions, both offensive and defensive, it is evident that it requires natural talent to distinguish at once which of these positions will best suit the proposed object, and to be able to embrace at one view the adjacent ground, its details, and the uses that may be made thereof.

However exact may be the reconnaissance or military description of a country, its object is not accomplished unless it points out the advantages and inconveniences of the different localities, as well as the means of turning them to account: one local feature neglected or misunderstood may give rise to serious errors and dangerous consequences.

Bearing in mind these considerations, we will now proceed to explain and detail methodically: 1st The different objects to be taken into consideration in reconnoitring a country with a view to war and its operations; 2nd The reconnaissance of a country which it is intended to invade; 3rd The reconnaissance of positions occupied by the enemy. Detachments sent out with the intention of deceiving the enemy, by making him uneasy about some project not meant to be carried into execution, may also be considered as reconnoitring parties. This species of reconnaissance is connected with the operation called "Demonstration," and will be treated of specially in a separate chapter.

The objects of the reconnaissance of a country, or of a portion of ground with the view of planning military operations, are twofold. The first consists in the examination of the local features, comprehending the general nature of the country, as well as the details to be studied in each separate part of the ground. The second object is the application of the result of the first examination to the general and detailed operations of the war.

Should the war be carried in the same direction as the courses of navigable rivers, great facilities of transport may be derived from them; but should it be necessary to ascend these rivers, they would facilitate the operations of the enemy, and impede those of the assailant.

A country may consist of plains, or of mountains, or it may contain both; it may be dry or marshy; abounding in wood, or entirely without trees; open or rugged; intersected by rivers, streams, canals, woods, hedges, ditches, ravines dry or filled with water, and lastly by chains of hills, &c.

The different descriptions of country may be classified as follows : 1st, Plains; 2nd, Countries covered with woods and intersected with rivers, streams, or heights; 3rd, Mountainous countries; 4th, Maritime countries.

It is easy to become acquainted with a flat country, or with plains but slightly broken, because they are almost always traversed by rivers or streams, and a knowledge of these, of the situations of the cities, towns, and villages, and of the direction of the roads, leaves but few details to be desired, and those easy to seize and to express.

Flat countries, those which are fertile being generally much intersected, present in a military point of view, a thousand facilities for all sorts of stratagems; and on this account, require to be reconnoitred with great care.

Wooded countries are more or less intersected. Two sorts may be distinguished: firstly, those covered with large forests, with respect to which it may be well to observe, that they are not everywhere impenetrable, although easily defended, by abattis, redoubts, or by taking up positions commanding the approaches: and again, those where thinly-planted trees of high growth crown the heights, which may then be easily occupied.

Wooded countries of the second description are those interspersed with woods, and having plantations and fields surrounded with hedges. A good knowledge of their roads should be obtained; and although in such countries the impediments frequently vary, they may be easily surmounted by activity and intelligence. It is above all important to open plenty of communications.

Mixed countries, that is to say, those which are partly wooded and partly intersected, are the most common, and the means to be employed in order to become acquainted with them partake of those used in examining grounds of their respective characters.

The greatest attention must be given to the details of countries intersected by canals, or navigable streams, particularly when they may favour or impede any design.

Mountainous countries are the most difficult to reconnoitre, (see Chapter VIII., on Mountain Warfare).

The reconnaissance of maritime countries embraces two points; that of the sea and that of the land; both of which, in planning a design, should be equally studied, and taken into consideration together: although they are here separated to preserve order in the details.

1st The reconnaissance of the sea consists in that of the bays, creeks, sand-banks, and roadsteads. It must be ascertained whether they are open or sheltered, and from what winds; also, whether the anchorage is good: if they are easily reached, and what is their depth of water: whether there are any currents: what winds serve best in making the roadsteads or ports; and what in quitting them: lastly, the advantages or disadvantages of these ports; the most favourable time and height of tide for approaching them; whether there are any spots along the coast which are dry, or nearly so, at low water, and which may be approached or a landing effected there, particularly in the vicinity of any posts or places that the enemy would wish to gain possession of: whether the sea is generally speaking smooth or rough; and at what periods it may be more or less dangerous: at what point a disembarkation may be effected; and what are the best means of preventing it.

2nd The reconnaissance of the land should be conducted on the supposed possibility of a descent on the part of the enemy, which renders necessary a plan in two parts, one of which should be always balanced against the other: viz.—1st The facilities or difficulties the enemy will meet with in attempting to land; 2nd The means of defence afforded by the country. The first thing to be examined is the nature of the coasts; Are they bold, open, and suitable for descents? It is important to form a correct opinion of all the details which characterize the accessible points, the dangers to which they expose the defenders, and the means of obviating them.

Coasts are bordered by sandy flats, or by low rocks, which render the approach to them more or less dangerous; or else they are protected by cliffs, which, if they do not absolutely interdict all access, render it very difficult.

Headlands and capes are suitable for the establishment of forts and batteries intended to defend accessible points; and adjacent islands may serve as advanced works, which, when proper measures are taken beforehand, always impede the attempts of the enemy. The following positions should be reconnoitred—1st Those most suited for batteries commanding the anchorages, passages, &c.; for which purpose plateaux are selected overlooking the coast; the difficulties of a disembarkation are thereby increased; 2nd Those fit for entrenchments or epaulments opposite the points where a descent may be attempted; 3rd Those of camps and posts to protect the interior of the country, or at least, its principal places: these should be retrenched and maintained, by force, if necessary; Lastly, All the resources should be taken into calculation which may render more advantageous the positions to be occupied, and may add to the different means of defence. This renders necessary a knowledge of the state of the posts, guard-houses, and batteries, as well as of the total number of artillery protecting the coast, or that may be required for that purpose.

After having examined the coast line in the manner indicated, the nature of the ground in its rear must be considered; it must be ascertained whether the country is open or intersected, traversed by rivers, or dotted with woods, or marshy spots: whether the fields are separated by ditches: whether the roads are hollow and inconvenient: what heights there may be, and if their gorges are spacious, or narrow and cramped, parallel to or at right angles with the coast. With regard to the rivers, which should be ascended for some leagues, their depth and the height of their banks should be examined, as well as the length of their courses, and the number and description of boats that ply on them.

It should be known what countries these rivers traverse before reaching the sea: what are their products; and what use may be made of them with reference to the subsistence of the troops already on their banks, or about to be established there. It should here be stated, that as the tides cause variations in the time and mode of passing rivers which have their embouchures in the sea, it is indispensable to ascertain their influence in those under examination.

With respect to the communications necessary to enable troops to be transported rapidly from one point to another, by crossing rivers or streams, it must be considered, whether there is any danger of the enemy's succeeding in breaking down or burning the bridges, as this would render the communications difficult, causing much delay, and impeding the movements of those defending the coast. In this case, such expedients must be resorted to as are best calculated to prevent or remedy such accidents; and should that not be possible, it must be ascertained how far it would be necessary to ascend the rivers or streams, before finding other bridges.

It must be known whether a sufficient number of troops can be placed in the forts, towns, and villages along the coast, to defend them until reinforcements can be sent from elsewhere: also whether magazines can be established, and the means of effectually protecting them: and lastly, what facilities there may be for their transport.

The population of the country must be ascertained, as well as the disposition of the inhabitants; and whether they could be armed in case of necessity. It is also desirable to know whether men employed in the coast guard, custom-house, or other departments, may be counted on: and whether they could, when reinforced by the inhabitants, offer sufficient resistance in case of surprise, whilst the troops were marching from other stations on the points attacked or menaced.

The distances of the different parts of the coast to be defended from the probable starting point of the attacking

army should be taken into consideration, as well as the time necessary to traverse them.

Should an invasion by sea of the enemy's country be projected, all the information above indicated becomes indispensable with reference to the arrangement of the necessary plans. In all cases, it is well to examine the systems of defence adopted on previous occasions; and to correct and improve them, if possible; but if not, new systems must be established.

Lastly, in reconnoitring the country adjoining the coast line, the local peculiarities (which have been already alluded to as existing in all countries) must be taken into consideration.

Whatever may be the nature of the country to be studied, the following information should be procured:—It should be ascertained whether the country is cultivated or uncultivated; fertile or barren: what constitute generally speaking its resources, its commerce, productions, manufactures, and their quantity and quality: what are the seasons of the different harvests; whether they are abundant; whether of corn, wines, or forage: whether the country produces horses and cattle, and of what description.

These details on the fertility of a country and the nature and quantity of its production are very essential; because a general almost always directs his operations and movements according to the resources he can find in grain, forage, &c. It is necessary in an enemy's country, which is generally less known than one's own, to procure correct information on the subject of its capabilities in every particular, in order to know beforehand what may be drawn therefrom for the support of the war, that is to say, for the subsistence and use of the army during a given time; and in order to avoid any miscalculation on this head, the revenues and manufactures of the country should be known with accuracy.

As the enumeration of all these necessary details would require considerable space, and their number might cause

some to be forgotten, a table (like that annexed) may be prepared with advantage. The different heads, having each a separate column, are shown at a glance, and a tabular summary of the resources of a country may thus be obtained.

When contributions are to be levied in money or in kind, and the country is likely to be occupied for some time, the demands made should be based on an accurate knowledge of the existing amount of grain, forage, &c. ; and should be such as to leave the inhabitants what is necessary for their own subsistence, for that of their cattle, and for seed, so as not to ruin the country, but to render its resources available for future years.

Let us continue the enumeration of the points to be taken into consideration in making a reconnaissance. Is the country healthy or otherwise? Cold or hot? What physical causes affect the health of the inhabitants and of strangers? Are there periodical epidemics? What produces them, and in what seasons do they prevail? How long do they last, and what is the best mode of avoiding them? What are the customs of the country in this respect?

Is the population large or small? Are the inhabitants favourable or the reverse? Are they courageous or timid? Are they capable of rising and retiring to their strongholds, and defending them?

By what routes may the enemy reach your frontiers and penetrate into your country; and what are the approaches to his?

All this information is necessary in order to regulate beforehand the movements of an army and of its different columns, when they are about to be thrown rapidly on the points it is most important to occupy, either with the view of counteracting the designs of the enemy, or of carrying out one's own.

An accurate knowledge of a country is indispensable when movements are to be concealed, or when a retreat is to be effected.

Where may magazines and dépôts be established? Must the convoys be conducted by land or water? Will it be possible hereafter to transport these magazines by means of waggons or boats, and to re-establish them with safety in case of any change in the circumstances of the campaign, that is, should it become offensive, instead of defensive, or *vice versa*?

What are the principal camps and posts to be occupied with infantry or cavalry, or with corps composed of both arms, in order to be absolute masters of the country, to keep it in check, and to protect the magazines? Which are the shortest and safest routes leading to these points, and by which an easy and free communication may be ensured between them and the army, such and such positions being supposed to be occupied?

In short, every thing that may exercise an influence on the war must be studied with care, and be well known, taking advantage of every detail, and neglecting no opportunity however slight.

Let us now proceed to the reconnaissance of the country it is proposed to invade.

The objects of this reconnaissance are—1st To obtain information respecting the country in general; 2nd To prepare such movements as may be required, whether only with a view to pass through the country, or to take up positions with the intention of occupying it permanently; 3rd To obtain a knowledge of the posts occupied by the enemy, or of those it may be proposed to occupy; Lastly, To examine those parts most suited for the marches and encampments of an army and for fighting, and those which may prove advantageous positions, either with the view of protecting a considerable extent of country, or of advancing into the enemy's; taking care always to look well to the safety of the flanks and rear.

From what has been already said, and from the following remarks, may be seen, what points should be treated of in descriptive military notes, intended to give the result of a reconnaissance.

The staff officers or others, who are sent in advance on each of the routes by which the troops are to proceed, should receive along with their instructions, an itinerary of the marches of the troops; and they will conduct the reconnaissance they are charged with, and complete the explanatory notes in the following manner:

The distances from one halting place to another should be calculated by hours; the nature and state of the roads, and of obstacles which might impede or retard the march, such as the passages of rivers and streams should be carefully described, as well as the means of surmounting these, either by making use of the facilities that may be found for constructing bridges where necessary, or of the resources presented by fords, boats, or any existing bridges.

The roads from one halting place to another should be given, and a correct itinerary of them prepared. It is of great importance to know the distances, because this is the only means by which the general movements and those of the smaller bodies can be combined. Where roads are forked or intersected by others, the points to which their branches may lead should be carefully indicated; observing also to specify the distances, and the particular roads leading from one city, town, or village, to another.

The greatest attention must be given to descriptions of the high roads, as well as of those communicating with them, stating for what sort of troops they are suited; that is, whether they are practicable for waggons, artillery, and cavalry, or merely for infantry, the distances being always given in hours.

The villages, country seats, houses, mills, &c., that may be situated on either side of the route to be pursued, or in the same direction, should be remarked. The cities, towns, and villages, which are enclosed, or are defended by castles or strongholds, must be mentioned, as well as their respective distances and positions; so must those posts susceptible of being occupied with or without any preliminary labour, such as churches or churchyards raised and sur-

rounded with walls ; everything, in short, that is connected with encampments and military positions.

Exact information must be obtained respecting each city, town, village, and country seat, as to the states to which the former belong, and the proprietors of the latter.

Some men well acquainted with the country should be sought out, and a note made of those who have the best and most extensive knowledge on the subject: their names and residences should be given, in order that they may be easily found again if required.

The villages destined for halting places should be carefully examined in detail, to ascertain whether they will hold the necessary number of troops, and if any orders have been given, or preparations made, for their reception.

The resources in forage, straw, corn, oats, and vegetables, to be met with on the spot, must be ascertained. It is also necessary to know whether the inhabitants can supply bedding for the soldiers; or if their accommodation can be facilitated by making use of any neighbouring villages or hamlets; and in this case, directions should be given to those whose duty it is to make the necessary arrangements.

Should the staff officer making the reconnaissance be accompanied by commissaries, the duties connected with the supply of provisions and of hospital accommodation devolve on the latter; while the former have only to decide where the hospitals are to be formed, and to take care that the commissaries employ adequate means to meet the requirements of the different services. The staff officers should in like manner satisfy themselves that arrangements have been made by the contractors, or those furnishing supplies, to ensure the subsistence of the troops.

Should the staff officers have occasion to mention any city, town, village or hamlet, river or stream, with a name that might give rise to any difficulty, they should make some of the principal authorities write it in their presence; and should they not be acquainted with the language of

the country, each officer must take care to provide himself with an interpreter, so as to be enabled to obtain such information as he may consider necessary.

The staff officers should be provided with lists of those quarters on the line they have to pursue, which are to be occupied by the troops; so that while making the reconnaissance, they may at the same time examine them. Notes should be made respecting the carriages of the country; their number and description; and also of the resources to be found in horses, oxen, or mules for transport.

The number of ovens and mills in each place should be noted, and the resources of the country in wood of all descriptions.

Should the officers charged with a reconnaissance find that in consequence of precautions not having been taken, the roads are not in a fit state for the troops, they must at once acquaint the quarter master general with the fact; and show how they may best be repaired.

When details of a military position are given, the points of "appui" on the right and left should be carefully specified; as also the villages or posts that may be within the lines occupied by the troops, to the front or rear; the best situations for the cavalry and infantry, as well as for the artillery, the park, the hospital, and other dépôts. The bridges, which ought to be constructed or destroyed, must be indicated; the communications to be opened; the earth works or abattis to be made. Lastly, the outlets by which to advance, and the mode and facilities of retreating.

As a general rule, staff officers or others sent to reconnoitre a country about to be invaded, should be careful to add any thing that may have been omitted in their instructions, but of which their zeal and intelligence may perceive the advantage.

Reconnaissance of Positions occupied by the Enemy.

In pushing forward these reconnaissances, which are almost always made with armed parties, there may be three different objects:—1st That of obtaining accurate information respecting the position occupied by the enemy: 2nd That of ascertaining his strength, dispositions, and movements: 3rd That of forcing him to show his intentions, by attacking the whole or part of his posts, or by merely approaching them.

The use of the troops accompanying reconnaissances of the two first kinds, is to give facilities for attaining a point whence the force and position of the enemy, as well as a considerable extent of ground may be seen.

To obtain satisfactory results in this description of reconnaissance, the strength of the party should be sufficient, not only to drive back the troops occupying the point from which the position held by the enemy may be seen, and his forces estimated, but also to hold their ground until the reconnaissance is completed.

Reconnaissances of the third kind are limited to attacks of posts, and they are classed under this head only on account of the object in view; as for instance, when a post is attacked which the enemy appears anxious to maintain, either because it favours his ulterior views, or because he is about to take up a new position, or is meditating some offensive or retrograde movement, &c.

In enterprises of this description, no greater number of troops should be employed than may be necessary to carry the post to be attacked; and should the enemy return with reinforcements, it must be abandoned, to avoid engaging in a useless combat; for the object of the reconnaissance is already effected, as it is evident from the enemy's efforts to retake the post, what importance he attaches to its preservation.

An attack made on the lines of the enemy's out-posts,

whether on the whole extent generally, or only on one point, may be classed as a reconnaissance of the third description.

The number of troops detailed for an attack of this nature, should be estimated with reference to the number occupying the posts to be driven in; and should the enemy return with reinforcements to regain his line, a retreat must be sounded to avoid an engagement which might become serious, and which the attacking party is seldom in a position to maintain.

All reconnoitring parties should move with the greatest celerity, and should retire as soon as their object is attained. It is not enough in this operation, that the dispositions be well combined; they must likewise be conducted with ability; and care should be taken during the advance to leave intermediate posts in order to facilitate the retreat.

One of the best modes by which officers can become skilful in the science of military reconnoitring, is by accustoming themselves when travelling, hunting, or walking, to look on everything in a military point of view; that is to say, they should, when so employed, study the directions of the roads; the courses of the streams. They should, in mountainous countries, learn to distinguish the principal chains from the spurs and branches thrown out from them; the sources of the rivers; the general nature of the slopes; the gorges; the depth of the valleys; the distances between places; the points from which the general aspect of an unknown country may be best learned; the points best adapted for making a survey; the triangles and base lines to be projected by the eye, &c. It is by thus exercising their judgment, that officers may attain clearer and more military ideas of a country.

It is not enough that staff officers should know how to reconnoitre a country, they must also be accurate judges of ground, and be able to appreciate distances from different points of view. They must be proof against the numerous

illusions caused by the different appearances of ground when unoccupied or covered with troops; by the complicated effect of troops of different descriptions seen from different positions; by the manœuvres of these troops; the tactical stratagems employed by them when skilfully handled; by the state of the horizon; and a thousand other accidental and local circumstances.

Moreover these officers should know how to form a prompt and correct opinion of the influence that any given country may have on military operations; of the positions it offers in such and such cases for an army, or any given body of men; of the best approaches and general line of march towards any given point; lastly, of the general bearing that the nature of the country may have on the armies about to act in it, and of all details connected with the subject.

4. *On Marches.*

THE object of all marches is to reach some given position, either with a view to its permanent or temporary occupation, or to some ulterior movement.

Before commencing a march, a knowledge should be acquired, by means of reconnaissances, maps, and notes or itineraries, of the following particulars, viz. :

Of the directions of the roads, their length and points of termination; whether they traverse rivers, streams, villages, woods, marshes, plains, valleys, or heights; if they are hollow, and what is their width; if it is the same in all parts; and how many men, either on foot or mounted, can move abreast; whether they are stony or sandy, well beaten or muddy, flat or enclosed, and commanded by the surrounding country. After having acquired this local information, the

time necessary to traverse them must be estimated approximately in hours of march. This knowledge is of the greatest importance, and indispensable for the punctual execution of all movements. It must further be ascertained whether the nature of the ground changes, and to what extent; if the roads may be easily broken up, and if they require repairs; if there are precipices to be encountered, or any considerable ascents or descents; if the roads are practicable in all seasons; and if they will admit of the passage of cavalry, the transport of guns, carriages, &c.; whether they are only fit for infantry, or will answer equally for all arms; whether they are lined with trees, woods, hedges, or ditches; what roads cross or run into them; whether these are good or bad, and to what points their different branches lead.

Those roads only are good in all seasons which are paved, or covered with stones or flints, with gravel or coarse sand. Those passing through stiff soil, enclosed by fences, almost always become bad in rainy weather.

When there is only one road in the same direction, it should be ascertained by examination whether others might not be opened parallel to it, in order if necessary to increase the number of columns. In this case, the routes must be accurately prescribed, and the general nature of the country ascertained.

Secrecy, celerity, and order are in marches the most indispensable conditions.

Without profound secrecy, a risk is incurred of failing in the object in view; for the enemy being acquainted with the motive for undertaking any given march, may prepare counter-movements, and cause the failure of the best concerted enterprise.

Without great celerity, the state of things with reference to which the march was planned, may change; and the slightest delay may render useless and even objectionable a well combined movement that would otherwise have been of the highest importance.

Without order, no march can be conducted with promptitude. When the commanding officer has no longer his troops well in hand, every movement is attended with danger; and should circumstances require any deviation from the original disposition, confusion is the result; obstacles become multiplied; and the propitious moment for the execution of the enterprise is often allowed to escape.

In order to perform a march with order and celerity, the troops should be extended on as large a front as their safety and the nature of the ground will permit; they will thus reach their destinations more quickly, and their leader may always be master of his movements.

It is not proposed in this work to lay down principles for the marches of large armies; but merely to point out what rules should be observed in order to conduct properly the marches of corps forming advanced and rear guards, of detached bodies, &c.

All marches are made in one of the three following modes,—to the front, to the rear, or to a flank; in a perpendicular, parallel, or diagonal direction, according to the situation of the point towards which the march is directed, and the position of the enemy.

From the direction of the march, the formation of the corps into one or more columns is determined; and it is seldom necessary to divide a small corps into several; at least it should be avoided as much as possible, particularly if there is any danger of being attacked during the march.

Every facility should be given to enable the troops to execute the march with order and celerity; and obstacles which might cause delay or disorder should be carefully removed.

In a march to the front, each column should be preceded by an advanced guard, whose principal duty is to reconnoitre the ground across which the column is to advance, and to drive from it any parties of the enemy.

In marching to the rear, each column should in like manner be covered by a rear guard, which arresting the pursuit of the enemy, enables the main body to reach its

destination rapidly and with safety, or to take up a good position.

In a flank march, as the column may be attacked in front, in rear, and on either flank, it should be covered by a chain of small parties, more particularly on the flank nearest the enemy. This chain need not necessarily be strong, for were the column attacked in front or on a flank, it could quickly and easily show a front to the adversary, either by forming line on the front, or by wheeling into line to the right or left.

The nature of the ground decides what description of troops should form the advanced and rear guards; as well as the distance to be observed between them and the columns.

(It is not out of place to observe here, that the most advantageous formation of a column supposed to be marching at a short distance from the enemy, is that of the "column of attack;*" because this formation readily lends itself, not only to the sure and rapid execution of all other formations that circumstances may demand, but because it is naturally the order of march and of combat; it occupies less ground than the column at wheeling distance, and again it fatigues the troops less than the close column.)

In an open country the advanced and rear guards should be composed entirely of cavalry; this arm, being able to go to a greater distance from the main body than infantry without committing itself, can observe more closely the movements of the enemy, and can retire more rapidly. Cavalry scouts should be pushed to considerable distances, more particularly in flat and open countries where the enemy having no obstacles of ground to contend with, might advance with great celerity, and fall on the main body before they were aware of his approach.

* The order to form troops in "columns of attack" by battalions is often misunderstood; some generals deploy the battalions in rear of each other; but the real meaning of the order is, that the battalions should form columns of grand divisions at section distance on the two centre companies.—JOMINI, *Vie Pol. et Mil. de Napoleon*, vol. iii. page 273.

When the nature of the ground is such that it will not suit either for cavalry or infantry alone, the advanced and rear guards should be composed of both arms, so that they may afford each other mutual assistance; and in such a case, they ought not to go so far from the main body.

In a very broken country, or one so mountainous that cavalry would be useless, infantry should be detached both in front and rear, but without going too far; because in this description of ground there are defiles at every step where the enemy might lie in wait, surprises and ambuscades being easily planned. Ground of this description should be examined with the greatest care; bearing in mind that if it is favourable to the march of a retreating column, it also renders movements in advance very slow and difficult; and should be entered and traversed, so to speak, with the "lead going."

The distance to be preserved between the advanced or rear guards and the main body, according as the march may be towards the enemy or the reverse, should be neither too great nor too small; and the force employed should always be proportioned to the main body.

Although the strength of an advanced or rear guard, as well as the distances to be preserved between them and the main body, can only be fixed approximatively, still the following data may assist in deciding on these points; 1st The strength of an advanced or rear guard should be about a fifth of that of the main body; and 2nd The greatest distance which should be allowed between advanced or rear guards and the main body, supposing the latter to consist of about two thousand men, is a thousand paces. Were the strength of these guards more than a fifth, the main body would be too much weakened: were it much less, they would not be able to withstand the first onset. In like manner, were the distance between the guards and the main body more than a thousand paces, they might be beaten before the latter could arrive to succour them: but again, were the distance much less, the enemy by

attacking suddenly the advanced or rear guards might reach the main body before it had time to make the dispositions necessary to receive him.

The nature of the ground, the different descriptions of troops to be employed, and the different circumstances that may occur, and which cannot always be foreseen, are so many considerations which decide how far the rules just given may be modified.

In an open country, the greater part of the cavalry may be placed at the head of the column. Should the nature of the ground be varied, it must be divided, one half in front and the other in rear; and in a very broken country, it should march behind the infantry. As to the artillery, it should be placed in the intervals of the column. It is only in countries much intersected that the greater portion of it is placed in rear of the infantry; and in this case, the latter should cover the artillery by means of parties attached to it.

The advanced and rear guards should only have with them pieces of small calibre, and but very few of them if the country is very rugged.

We may observe, however, that there are cases where the advanced guard of an army should be provided with field pieces of the largest calibre; as for instance, when it is already on the ground where the general proposes to give battle. In this case, it should be able to keep the enemy at such a distance, that his projectiles may not reach the columns until they are in a position to advance on him: but these are exceptions.

The advanced guard of a division marching on a high road in an open country, may easily arrest the progress of an enemy coming directly towards it, and may thus enable the corps to make its dispositions for attack or defence; but not so in a mountainous country, where the roads practicable for columns generally follow valleys, which debouch either in a plain or in other valleys running in directions entirely different. Valleys at a distance of

several days' march from each other, often have communications not only by roads but by paths which traverse the sides of the mountains, and follow all their windings.

In such countries the advanced guard alone, would not be sufficient to cover the corps which it precedes, from attacks of the enemy's detachments, which sallying from the neighbouring valleys and climbing the heights on either side of the road, could pour on both the advanced guard and the column, a well directed fire, which would not fail to carry disorder and destruction through their ranks.

An advanced guard not being able to extend its front in a mountainous country as in open ground, so as to prevent the main body from being turned or unexpectedly attacked in flank, and being also unable to occupy all the passes leading to distant valleys, sometimes many miles from its route, it is necessary, in conducting a march through a country of high mountains, that the main body be not only preceded and followed by an advanced and rear guard, but also, to ensure its safety, that parties of infantry be detached on its flanks, covering them by marching in a parallel direction along the summits of the mountains which enclose the valley where the main body is advancing.

This precaution which is indispensable, is the only one which affords the means of securing troops from unexpected attacks while traversing valleys, or following the roads and paths which cross them.

It is not necessary that these detachments should be composed of a great number of men ; because small bodies can act better in countries abounding in high mountains. They should not keep further from the main body than is necessary to enable them to occupy the heights from which the enemy might harass the march, and they should be sufficiently near to be supported in time. Neglect of this precaution, particularly in mountain warfare, has often caused the loss of the best troops, and occasioned the greatest reverses.

Night marches should be made only in the most urgent cases ; because, in the first place, the men cannot be seen in the dark ; secondly, because such marches favor all sorts of disorders ; and thirdly, because they are opposed to that celerity which is so necessary and valuable in the execution of military operations.

When an open attack or a surprise is contemplated, the advanced guard should be at a short distance from the head of the column, so as not to alarm the enemy too soon. In such cases, the patrols that may be sent forward to reconnoitre the route should not be pushed too far.

The advanced guard being brought nearer, it is true that the officer commanding the column sacrifices some of the advantages of marching in security, but he should compensate for that, 1st By increased vigilance; 2nd By covering his front and flanks with small flying patrols; 3rd By making his troops march in the highest possible order, and in silence, so as to secure himself from surprises as well as to be in a condition to act successfully should anything unforeseen occur.

When from the nature of the ground, it becomes necessary to divide small bodies of troops into several detachments ; as for instance, when the object marched against can only be reached by combined movements from different points ; or again, when the advance along a high road can only be conducted in safety after the cross roads or some neighbouring positions are secured ; in either case, it is necessary above all, 1st To be thoroughly acquainted with the ground on which it is proposed to act, as well as with that which surrounds it; 2nd To make a prudent division of his force; 3rd To know how to employ the time to the best advantage, making all calculations beforehand; and 4th Not to detach from the principal column, or to employ in the formation of the others, more than the number of men, horses, and guns considered strictly necessary to effect the object proposed.

The columns should always be in communication with

each other, and sufficiently near to afford mutual support. In an open country, they ought to march in such an order as to be able at the first word of command to form up quickly and in the best manner. With this view the heads of the columns should march in line, and the respective distances between the different columns and between the companies should be strictly observed. The nature of the country and of the roads, the destination of the troops, the presumed disposition and intentions of the enemy are considerations which should determine what description of troops may be best employed on the different points, and in what manner.

The artillery and baggage should not leave the practicable roads until absolutely necessary. Cross and hollow roads, ravines and forests, are only suitable for infantry; as are the plains for cavalry.

The three arms should cover and protect each other mutually, so that each may be able to deploy and make the best use of its peculiar advantages, and that all may be equally disposed and simultaneously directed towards the same object.

To these principles may be added another which should never be neglected, and which applies equally to an army as to a strong detachment; it is this, that the order of march may be such as to become the order of battle, by a few short, rapid, and simple movements.

This is the principle to follow, and not that which is given in many military works, viz:—"that a march should be conducted in the order in which it is intended to fight;" a false principle if not properly interpreted, or at least very equivocal, and consequently calculated to lead into error; for as the country which an army traverses in its march is generally different from that in which it would encamp or give battle, unfortunate results might occur were the same dispositions applied to two operations totally different, and to one of which they could consequently but rarely be applicable.

It could be only in traversing a country of exactly the same nature as that in which a camp would be formed, such as an open plain, that it would answer to march in the order of battle; but this would be a peculiar case, and an exception to the general rule.

The order of march is always subject to frequent variations, because it is and always should be dependent upon those of the ground; for example, should the route pass from a country of plains to one covered with mountains, and from this latter to a close country, intersected by marshes and woods, surely the infantry, cavalry, and artillery ought not to be distributed in the same manner, but according to circumstances and the nature of the country.

5. *On Skirmishing.*

IN warfare, the main object in planning the order of battle is, to obtain, by the union of forces, and by prudent combinations in employing them, decisive results, whether acting offensively or defensively.

This object being of the first and most essential importance, the order of battle best calculated to effect it is the only one worthy of consideration. All other dispositions should be looked on as accessory to it.

But to facilitate the execution of this order, those obstacles should first be removed which might cause delays at the decisive moment of action.

It is with this view that an army acting offensively is preceded by an advanced guard, whose principal duties consist in reconnoitring the country which the army has to traverse, in covering and securing its march, in

beating and driving back the enemy's posts, and in seizing his positions; in short, it is by the well directed employment of this advanced guard that the army is enabled to execute its movements with equal order, precision, and security.

Should the advanced guard approach a point which can only be carried by the assistance of the main body, it halts, takes up a position while awaiting the arrival of the columns, joins them, and if successful, resumes its former employment, pursuing the beaten enemy; but in case of a repulse, it will form the rear guard and cover the retreat.

When the army is in position, the advanced guard occupies the advanced posts, which cover and protect the army from surprises. Those positions are selected whence it may the most easily arrest the progress of the enemy in time to enable the general to ascertain and judge of his intentions, and to prepare the best means of resistance or of attack.

These dispositions, based on the nature of things, have been constantly followed, both in ancient and modern times; and the war of the Revolution has not introduced any essential changes, either in tactics or strategy; it has only added a new method to those already practised in preparing for the principal engagement.

In the early campaigns of the Revolution, the French army was formed in part of citizens hastily assembled, who had not received any military instruction, nor were they accustomed to war. The leaders could not hope with such troops to oppose an effective resistance to manœuvring armies. The danger was pressing; France was attacked on all sides; it was necessary to find some means of counteracting the immense advantages possessed by the enemy, as much from the good organization of their armies, as from their discipline compared with that of the French army at that period.

A new system of fighting was introduced. This system

consisted in the calling into play a considerable number of skirmishers—and to that France owes, in part, her early successes.

During the first campaigns, when an army was to be attacked, or a position defended, a part of the battalions detached as skirmishers performed in front of these battalions the duties of an advanced guard at the commencement of an attack, sweeping the enemy from the whole front; and, in the same manner, these detachments formed in skirmishing order and dispersed along the front of their battalions, commenced the onset by a well directed fire, which annoyed the enemy, shook his ranks, and thus weakened the resistance which he might otherwise have offered to the masses or the advancing lines. So much for the attack: now for the defence.

When the enemy, after having forced the line of advanced posts, approached the position occupied by the army, a cloud of skirmishers thrown out in front of this position often succeeded, by the efficiency of their fire, in putting a considerable portion of their adversaries "*hors de combat*," carrying disorder into their ranks, and often forcing them to abandon their undertaking.

Thus the objects proposed by the enemy's generals miscarried; the attacks of posts were repulsed, or important posts were abandoned. The enemy's lines thus exposed to a fire of skirmishers, were quickly thrown into disorder from the losses they suffered; they broke their ranks, and the loss of the battle followed; or if it happened to be gained, it was no longer in consequence of the first dispositions, for these not having been carried out, it became impossible for the enemy's generals to re-establish the original order, or to direct, in the heat of action, the movements of a disorganized army.

This novel mode of fighting practised during the early campaigns, and against which foreign armies had nothing to oppose but their tactics, was one of the causes which

contributed in a great measure to the advantages which the French obtained at that period.

This was not the only consideration which induced the European armies to adopt, generally, the system of skirmishing; there was another, and that an important one.

As long as battles were only fought in lines deployed and contiguous to each other, or in masses, broken ground, obstructed by ravines, marshes, or by thick forests, appeared impracticable, these being only used as points on which to rest the wings of an army; and ground intersected by ditches or hedges was not occupied, because it was presumed that the enemy's columns could not penetrate it; but the light infantry system diminished these obstacles; and until generally adopted, he who put it in practice had all the more advantage, inasmuch as ground is more frequently broken, than flat, open, and uninterrupted.

But the rules to be observed in the employment of skirmishers, as well as in their formation, depend on the causes which have rendered them necessary, as well as on the advantages and inconveniences resulting from this mode of fighting. Moreover, the fact must never be lost sight of, that bodies of skirmishers, although intended to prepare and facilitate the means of dealing the principal blow, are not themselves to deal it; consequently, their numbers must be limited so as not to weaken too much the main body, indeed, they should never exceed at most a third of the whole force.

Detached bodies should never be entirely dispersed in skirmishing order, they should keep a reserve or nucleus, which may support and relieve them, and on which they may rally in case of a check, so as never to be obliged to apply to the line of battle for assistance. This precaution is the more necessary, inasmuch as isolated men could not carry the smallest post; and again, skirmishers unsupported by any reserve, run a risk of being thrown back on the line by a brisk attack of cavalry—such retrograde movements often causing disorder.

The chain of skirmishers should never be too far from the line of battle, not only that they may be able always to fall back on the latter without committing themselves, but also in order that the skirmishers who commence the action may be always within reach of the troops who are to decide it, otherwise the success which the former might have obtained would be useless if the enemy, after his skirmishers were driven in and his first lines shaken, had time to re-establish order in his ranks.

The nature of the ground must decide in what manner the light infantry is to be distributed, and where the reserves ought to be posted.

These reserves are too weak to have any real consistence; they are only intended, as has been already said, to rally and support the skirmishers in case of need. They should, consequently, be so posted as not to be too much exposed to the fire of the enemy, and to be able easily and promptly to support, relieve, and rally the chain of skirmishers as a whole or in any particular part.

Acting defensively, light infantry reserves should occupy not only the most advantageous points, and those where they may offer the longest resistance to the efforts of the enemy, but, moreover, those whence they may be able to do him as much harm as possible; the points to be occupied, for instance, are the back of a dyke, a hedge, a wall, a ravine, an undulation of ground, trees, &c.

In the formation of those bodies destined for reserves, the same rules should be observed as are applied to the formation of those acting as skirmishers.

The strength of the reserves should be proportioned to the degree of resistance of which the post may be considered capable; but in any case the reserve should never be less than one fourth of the corps of skirmishers. The greater the strength of the reserve, the more resources it will be enabled to offer at the decisive moment.

In broken ground, where the attack is less vigorous, the strength may be reduced to a fourth, whilst in a flat and

open country it should be at least one third. The body destined to act as light infantry should be divided into three parts,—the first forms the reserve; the second placed in front of it is destined to re-inforce and relieve the skirmishers; the third extended in skirmishing order is in front of the second. This part covers the whole line, and there are circumstances where it should be formed rank entire.

The object in skirmishing being to shake the enemy by a dropping fire, the men should never remain in close order, but should open so as always to leave between each file an interval of several paces—six at the least; thus, fifty men will suffice to form a chain which will not only cover a battalion of 720 men, formed in three ranks, but will outflank it by ten yards, the extent of front being only 140 yards. This rule must always be attended to in the formation of a line of skirmishers, which ought to cover the front and overlap the flanks of the corps before which it is placed.

However, it is only from a knowledge of the ground that it can be properly decided whether the chain of skirmishers should extend along the whole, or a portion only, of the front: whether it should be stronger on one point than on another; and also, what movements it should make, whether in advance or retreat.

Every manœuvre made in the vicinity of the enemy, should be covered and flanked by light infantry, whether the object of the manœuvre be to form the troops from line into column, or from column into line.

The defence of points, of which the occupation is rendered indispensable by the position of the army, should not be entrusted to skirmishers, but to strong detachments of infantry, which establish themselves at these points while the army is taking up its position. The skirmishers should only be thrown forward immediately before the action.

When the skirmishers (placed in front) are obliged to

retire before a superior force, they should fall back on the reserve, and afterwards join the main body along with it. If, on the contrary, they are in pursuit of the enemy, they should never go beyond the point where they may be ordered to stop, for were they to give themselves up inconsiderately to the pursuit, the enemy might, by a feigned retreat, draw them into an ambuscade, and this would be the more felt, as it would weaken the number of troops destined to defend the position conjointly with them, and might suffice to cause its loss.

When the skirmishers can no longer hold their ground, even with the aid of their reserves, they must not be reinforced at the expense of the line of battle, for we may conclude that if the enemy employs a sufficient force to oblige the skirmishers to abandon a position which is closely connected with that occupied by the main body, or even independent of it, but within reach, he will not rest satisfied with driving in the skirmishers solely to possess himself of a point under the fire of the principal position, where he could not maintain himself, but, rather, that he intends marching directly on the position itself.

Supposing that in such a state of things, the corps acting on the defensive were to divide itself into skirmishing parties to dispute the ground in front, what would happen? Should the enemy remain in masses, he will certainly have but little difficulty in breaking the line of skirmishers at some point, and will reach the position without encountering any opposition.

But if the skirmishers fall back in time on the line of battle, before the enemy has been able to sweep off any portion of them, then their forces may be better employed at the decisive moment. What has just been said in relation to the course which skirmishers should pursue when defending a position, is equally applicable to them when acting offensively.

When opposing lines approach sufficiently near to attack

each other at once, the skirmishers should uncover the front of the line and move towards the flanks, in order to act in concert with the main body.

Every body of men which keeps itself compact will always break through a line of skirmishers, because, when men are scattered, unsupported, and uncovered on the flanks and rear, their means of resistance consisting of a few musquet shots, they cannot maintain their ground like masses or lines which, by their dispositions, support each other.

This is the reason why skirmishers should endeavour to find, in the nature of the ground, some compensation for the advantages which they lose by their mode of fighting, whether in attacking or defending a position, or in covering a flank march. They should in these different cases know how to select posts whence they may, from under cover, annoy the enemy and do him as much harm as possible, taking care never to separate themselves too far from the corps they precede or follow.

The mode of employing skirmishers should always depend on the nature of the ground acted on, and should have reference to the dispositions of the adversary.

For instance, if in an open country a corps has nothing but infantry with which to oppose an enemy who has both cavalry and infantry, it would be dangerous to call into action (on such ground) skirmishers, who would soon be driven back on the line by a charge of cavalry, where they would cause disorder, giving the enemy an opportunity of attacking the line with success.

In an open country, where infantry is acting against infantry, and where undulations of the ground are to be found, skirmishers are very useful; nevertheless, they should not be employed in too great numbers, nor at too great a distance from the main body, otherwise they might expose themselves to be cut off. In such ground, troops can only act with advantage in line or in mass.

The more the ground is broken, the more it is suited for

skirmishers, because, favoured by ravines, dykes, ditches, hedges, woods, and buildings, they can keep up their fire for a long time before the enemy, impeded by such obstacles, (and other local difficulties,) can manage to dislodge them.

Skirmishers can never be employed more usefully and advantageously than in ground of this description, where the deployment of columns is impossible, or at all events, very difficult, and they often find themselves obliged to separate in order to avoid the obstacles which obstruct their movements; whether the columns are in position or on the move, the skirmishers may easily succeed in breaking them, without sustaining the slightest loss themselves. However, if, notwithstanding the difficulties of the ground and the well directed fire of the skirmishers, the columns still continue to advance, then the skirmishers must fall back on their reserves, which should always be within reach in order to support them.

If, notwithstanding the junction of the skirmishers with their reserves, the enemy still obliges them to retreat, they should make a stand behind every obstacle which the ground may present, and dispute them all vigorously before they fall back on the main body.

When the enemy is on the line of march, and skirmishers are sent out to harass him, they should ensconce themselves behind hedges, palisades, and buildings, in short, behind every description of cover from which they may best annoy and obstruct him. They should keep up a brisk fire on his front and flanks, retiring if he advances in force, and resuming their position should he recall the detachments sent against them.

When the advance is made with the intention of attacking the enemy, and skirmishers are sent on to commence the action, their chain should be formed beyond the range of the enemy's musquetry.

In an open country, skirmishers should march as much as possible in line, in broken countries the line should conform to the inequalities of the ground.

Skirmishers ought rapidly to clear any open spaces, in order to gain some advantageous point, whence they may keep up a fire without being too much exposed; and after some rounds, they should again move forward and occupy other points equally favorable.

When the skirmishers who are most in advance fall in with positions where the enemy is established in force, they should halt and keep him engaged until others coming up join them in dislodging, turning, and making him uneasy with regard to his flanks, until the reserves come up to force the position.

When the skirmishers have driven the enemy from his advanced posts, and have arrived at a short distance from his line of battle, they should disperse themselves behind the nearest hedges and ditches, and keep up without ceasing a vigorous fire on the line, until the mass of the main body has joined them and has commenced the action.

The rules to be observed by skirmishers when advancing, should be equally observed when they cover a retreat.

Whenever skirmishers are obliged to retire, they should halt at every point whence they may deliver their fire with advantage, facing the enemy if he pursues them closely; but taking care not to remain too far in the rear of the corps whose march they cover. To enable the main body to gain some advantageous position, it may be necessary for the skirmishers to make a stand at some particular point, and oppose to the efforts of the enemy a longer resistance than is prescribed by the usual rules. In such a case, the reserves, whose only object during a retreat is to support the skirmishers at the most important points, should halt with them, and take an active part in the defence of the position where the skirmishers are making a stand; still a portion of the reserves should always remain together, so as to give support to those parties that may stand most in need of it.

When skirmishers, in traversing open ground, are in

danger of being attacked by the enemy's cavalry, they should close, form in one body, and in this order rapidly gain the broken ground, or some favourable position.

When skirmishers arrive in front of a defile, which presents only one or two passes, whether guarded feebly or in strength, they should, in the first instance, penetrate by main force, whilst other skirmishers support this attack by keeping up a fire from points flanking the defile; and as soon as the passes are forced, the reserve should run forward, debouch, deploy, and occupy them, until the approach of the column, when it rejoins the skirmishers and follows anew their movements.

Should the passes be occupied in force, the skirmishers must disperse themselves along the edges of the defile, and keep up a sharp and well sustained fire, until the arrival of the reserves, or even of the main body; when the reserves should unite and simultaneously with the skirmishers who crown the defile, attack the point to be forced.

The defile being forced, should circumstances require the skirmishers to be pushed on further, the reserves continue to march in support of them. The rules above given as relating to the passing of a defile while advancing, are equally applicable to the retreat.

For example, when, in passing through a defile retreating, the pursuit of the enemy is not too close, the rear guard should establish itself at the most advantageous points covering the entry of the defile, and should make every effort to prevent the enemy from penetrating until the main body has passed through, or is sufficiently advanced not to be overtaken by him in the defile itself, whatever diligence he may use; the rear guard may then leave the points it had taken up, and continue its retreat; whilst the reserves of skirmishers, deployed and thrown out to the right and left of the defile, should defend the entry. As soon as the main body and rear guard are clear of the pass, the skirmishers and their reserves (of which a certain portion

flank the defile,) should form in sections, and follow the rear guard at a distance of from two to three hundred paces.

Whenever the enemy pursues his adversary vigorously, the passage of a defile (on the retreat) should be conducted as above directed; but as the skirmishers and their reserves must not be sacrificed by being abandoned to themselves, detachments should be posted at the outlets of the defile to remain there until the last of the skirmishers have cleared it.

In the attack and defence of forests, skirmishers should observe the same rules as those applicable to broken ground. In forests, in place of hedges, ditches, and buildings, they are covered by trees, brushwood, and inequalities of ground, which enable them to give their fire with advantage; but as in such situations the officers cannot see what takes place at a distance from them, they should devote the greatest attention to preventing the men from straggling and losing sight of each other; and should make them preserve, as much as possible, their alignment as well as their communications. In such ground, it is better that the skirmishers advance more slowly than that they should not march together; for any opening or interruption in their line may be attended with serious results; the enemy might, without being perceived, pass through the line, cut off and defeat one part, without the other part being in the least aware of it.

Skirmishers can never be more usefully employed than in a country of high mountains, where the war is generally confined to affairs of posts; for although in mountainous countries the only roads practicable for corps with waggons or other carriages are to be found in the valleys still there is no mountain so inaccessible that a few men may not find paths by which to climb its heights, or across which small bodies of troops may not be sent.

The following principles show how skirmishers should be disposed and made use of in mountain warfare, as well in the attack as the defence.

In countries abounding in high mountains, skirmishers, at the moment of attacking a position, should be detached on the heights on both sides of the valley, where the enemy may be. They should gain the eminences successively, and march so as never to pass each other. If they succeed in driving back the enemy, either by main force, or by threatening to turn him, and he effects his retreat by paths across the rocks, then the skirmishers must pursue, whilst others seize points on the heights from which they may with the greatest possible advantage direct their fire on his position, and thus favor the attack which the main body is making in the valley.

Should the skirmishers, after having dislodged the enemy, find any paths leading to his rear or flanks, some should follow them in order to alarm and render him uneasy, whilst the greater number join in the principal object, which is to force the position.

When, in order to dislodge the enemy from mountains, it is necessary to be master of the summits, gorges, and of all the elevated points, so as to take him both in flank and rear, the nature of the ground obliges us to employ small detachments, which must march in skirmishing order by any paths they may find. They should advance slowly, and reconnoitre all passes attentively. Their reserves should post themselves on the points where several paths cross, and more particularly on those by which, in case of retreat the skirmishers would have to retire.

When, in mountainous countries, the skirmishers are advancing, and have arrived in sight of an enemy's post, they should separate, and take up such positions as will enable them to attack it from several points at once; and should they perceive on the heights which command the post any point whence they may take the enemy in flank and rear, they should at once make for it.

When, acting on the defensive, in a mountainous country, a position is taken up at the entry of a valley, or in the valley itself, the summits of the surrounding mountains should always be occupied by posts, which, in case of attack, will form and act as skirmishers.

It should be observed that every defensive position in a valley is taken up with reference to the strength of the body which has to defend it. Such a position is selected either behind a narrow pass, in front of which the enemy, before he could commence his attack, would have to form under a fire directed on him from several points, or else in the pass itself. In either case, the flanks of the position would rest against the mountain; and, to ensure the safety of these flanks, the heights to the right and left should always be held. This position should be occupied in such a manner as to allow of taking the enemy in flank, if he makes a front attack, without, however, endangering the safety of the point against which his attempt is directed.

To effect this, detachments must be sent out, which, climbing the neighbouring heights, crown them with skirmishers. These should be so placed as to be able under cover of rocks, trees, &c., to direct a deadly fire on the enemy. A small reserve should hold the heights, and the paths by which the skirmishers would have to retire, if forced to retreat.

The skirmishers should occupy and defend the rocks, the mountains, and the paths, across which the enemy's detachments might be able to gain the highest points, whence they could easily attack the flanks and rear of the position.

The commander of a post placed amongst mountains should always keep his reserve on those points where several paths cross, and more particularly on those where he may be able to make head for the longest time against an attacking enemy.

Detachments of skirmishers occupying mountains should

only remain there so long as their retreat is secure; otherwise, when they see that the enemy advances with superior forces, and threatens to intercept their communications with the main body, they should retire from their posts, being guided as much as possible in their march by the movements of the main body, and taking care to preserve such a relative position as to cover and protect it by their fire.

Should the enemy take the skirmishers in flank, and they find themselves unable to make head against him, even with the assistance of their reserves, they must retire; but still sufficiently slowly to give the main body which is in the valley time to retreat, or to make such dispositions as circumstances may require.

When the officers who are charged with the direction of the light infantry in a mountainous country know how to employ simultaneously, or by turns, valour, prudence, address, and audacity, they almost always constrain their adversary, even when superior in numbers, to yield, not only the posts established in the valleys, but also those situated on the heights.

The employment of skirmishers is applicable not only to operations which take place in the field, but also to the attack and defence of places.

In the attack of places, the skirmishers should establish themselves in front of the parallels, hollowing out circular pits in which to obtain shelter from the fire of the place. In these small preliminary works, the skirmishers should be directed by officers of the engineers with reference to the defilade of the guns, and should be assisted by sappers, in order the more promptly to obtain cover.

The skirmishers should form a cordon in front of the trenches, which, in case of the enemy making a sortie, would remain only long enough for the line to be made aware of the movement, and to take measures to meet it; the artillery of the place diminishing its fire, as the sorties approach the parallels, the skirmishers can easily effect their retreat, and put themselves under the protection of

the troops of the trenches, combining with them in their movements, whether they advance to repel the sortie, or confine themselves to the defence of their lines.

The skirmishers placed in front of the trenches are useful, not only in covering these trenches, but also in protecting and covering the reconnoitring parties. It is from these points that the officers of engineers first examine the exterior of places, and then starting from them at night make a closer reconnaissance. Following their example, those who command the skirmishers should attentively examine all the details of the ground, in order to continue their advance in the most favorable direction in front of the parallels, according as these are established.

Trenches are opened during the night. It is also during the night that detachments of skirmishers conducted by engineer officers form the small posts above spoken of, where, secure from the fire of the place, they may observe closely any movements which may be made at the out-posts, the posterns, the barriers, or behind the glacis, and may acquaint the officer commanding the troops in the trenches with them, by means of signals agreed on beforehand, which method is far preferable for this purpose to that of communicating by orderlies, the latter being too tedious and often dangerous.

The skirmishers should not confine themselves to observing the enemy from these points, but should annoy him and cramp his movements by occasional shots, and drive from the glacis any of his skirmishers who may show themselves there. It is above all, on any barbette batteries that may be established, that their skill may be exercised in picking off the gunners attached to the service of these batteries.

As the attack advances, and while it is possible to keep pace with it, the skirmishers should continue to keep down the fire, not only of the advanced works, but of the body of the place; and by taking good aim through the embrasures, they may, if they do not entirely stop the fire,

at least slacken considerably that of the heavy artillery, wounding the men, and rendering the service of the guns difficult and dangerous.

It is evident how usefully skirmishers may be employed in regular sieges, from the first investment of a place to the moment when the breach is practicable, and the assault is about to take place. They then assist by clearing the breach and the neighbouring parapets by a brisk and well-directed fire from the last approaches they have been able to establish.

In the defence of places, the skirmishers should occupy all the small works in front of the glacis; and one of the best maxims being, never to yield or evacuate any post until forced to do so, these small advanced works should be defended with obstinacy, and retaken whenever it is possible.

To ascertain when the enemy first breaks ground, and the direction of his trenches, is another duty reserved for the skirmishers in front of a place.

From the first period of the investment, the skirmishers should be constantly patrolling round the place. A patrol may easily cause disorder and confusion in the line of the trenches, more particularly when acting against troops inexperienced in such work; and at all events, the fire of the skirmishers on any workmen they may fall in with, will always serve as a hint to the artillery of the place, and give them a point on which to direct their light-balls.

In sorties, the skirmishers should act as in attack and retreat; in short, it is for them to ascertain whatever is going on, and to accompany every expedition made in the neighbourhood of the place, whether before or during the siege.

It is thus that skirmishers were employed in the attack and defence of Ecluse, Nimeguen, Kehl, Genoa, Dantzic, and of many other places where they rendered good service.

Officers who read attentively the accounts of these sieges, some of which are very remarkable, will find many curious facts and instructive examples.

6. *Attack & Defence of Forests.*

COUNTRIES covered with forests are not everywhere impenetrable, although they are easily defended by means of abatis and field works, and by occupying positions which command the approaches.

Extensive forests are often considered as obstacles to the movements of armies; but in examining them with attention, they will be found not only practicable, but even susceptible of being made favourable to operations. Our last wars offer more than one example of this.

Before occupying a forest which is to be defended, a preliminary reconnoissance should be made.

In order to conduct this reconnoissance properly, a tour of the forest must first be made; the roads, the ravines, and the streams preceding from it, must be examined; whence they come, and where they go. If considerable, they should be traced up to their sources, and notes made of the roads that cross them, and of the marshy places through which they pass.

The woods must then be penetrated; and their relative situations examined, as well as their extent, and the trees of which they may be composed; that is, whether they consist of underwood or copse; whether they are open or close, partially or entirely practicable, for troops of all descriptions, and for artillery. The facilities of traversing them must be taken into consideration, and of making them conduce to the attainment of the proposed object. Can they be turned entirely or in part? Do the different masses form openings equally wide throughout, or are they narrowed in certain parts? What is their extent, and what the nature of the woods on the right and left? Which are the points where the openings present the largest spaces? The nature of the ground in the forest must be taken into account; and it must be

observed whether it is flat or hilly, dry or swampy, and to what extent. Should there be any marshes, ponds, or other important objects worthy of remark, their dimensions must be determined, and their distances from the borders of the forest.

It must be ascertained whether the forest is traversed by rivers, streams, or ravines; what are its roads and paths; where the latter commence and terminate; whether new roads can be easily opened, or the existing roads enlarged, if necessary; what will be the best direction to give them, so that the enemy may not be able to make use of them to throw himself on a flank; lastly, the quality of these roads and paths must be taken into account, as well as their conditions in the different seasons.

It should be known whether within the precincts of the forest there may be any villages, houses, country seats, cultivated grounds, or meadows, and the distances of all these from the borders of the forest; also what cattle it may contain.

If a forest is to be attacked, it should be ascertained whether it can be turned; whether the enemy has prepared abatis, ditches, or entrenchments; and which side presents the least difficulty, and may the most conveniently be attacked.

It should be ascertained whether, after the forest is gained, it can be turned to greater advantage than when in possession of the enemy, either by making use of the thickest cover, or by forming strong positions by means of abatis; lastly, what may be the nature of the ground on either side of the forest, and what positions it presents.

It is dangerous to establish a body of troops in a forest; but when from particular considerations it becomes necessary, every advantage presented by the ground and the local objects should be made available; such, for instance, as country houses and enclosures, which should be loop-holed; above all, the troops should be posted in the most favorable positions, where they may rally and protect the chain

of skirmishers and their reserves; in short, all possible means must be practised to make the enemy pay dearly for every step.

The method of defending forests is based on the principle, that the borders should be occupied, whence the enemy advancing in the open ground, may be fired on from behind the trees and hedges.

In occupying the borders of forests, reserves should be kept behind the most important points, whether with a view to maintain the position, or to ensure a safe retreat in case of failure.

In open forests with low underwood, troops should be disposed according to the usual rules; when they are dense and the undergrowth is high, and more particularly when the troops are few in number, the borders should be lined with skirmishers, who, posted behind trees, hedges, and ravines, render the approach more difficult to the enemy.

Behind these skirmishers should be placed the rallying posts, and in rear of these one or two principal reserves.

The strength of the rallying posts must be proportioned to that of the line of skirmishers occupying the border of the forest. These posts, which should generally remain in compact bodies, are intended to relieve and rally the skirmishers and to support isolated points.

The principal reserves should, if possible, occupy a central point, equally distant from all those threatened, but more particularly a point from which the defence may derive the most efficient support; or else one on or near the route by which the retreat would have to be conducted. This reserve has another useful object; it may attack the enemy in a body as far as the ground will permit, should he have penetrated the forest; and if not able to stop him, it will at least serve to protect the routed troops, by covering their retreat.

In the defence of forests, the points to be guarded with the greatest care are the salient and re-entering angles,

and the hollows and ravines by which the enemy might advance under cover ; commanding heights ; those points where the principal passes cross, and which might be easily turned ; in short, every point which would give the enemy an opportunity of attacking under cover.

It is sufficient to place small posts on the other borders of the forest to preserve the communications, and prevent the enemy from penetrating, unobserved and without opposition.

When the enemy is weak or commits himself, as, for instance, by making his attack in disorder, and without having his flanks covered or resting on any obstacles, the rallying posts and principal reserves should in either case, and according to circumstances, attack with the bayonet, keeping always united. In such attacks small detachments of cavalry are very useful in seconding the efforts of the reserves.

There are cases where the advancing enemy should be attacked in the first instance with the fire of the skirmishers alone. These, posted along the borders of the forest, retire slowly on the reserves, keeping up their fire ; but afterwards return to the attack with the rest of the forces. This manœuvre should be executed more especially when any wavering or hesitation is perceived in the enemy's line, owing to the fire they have just experienced, or the difficulties of the ground.

In order to make a more efficient defence of a forest, when the time permits, abatis should be constructed, epaulments thrown up, and trenches dug : the defenders being under cover, the attack will be rendered more difficult ; and the artillery being more advantageously placed, will of course produce a greater effect. In such a case, the dispositions of the troops will remain the same ; but the chain of skirmishers on the borders of the forest may be strengthened ; then the rallying posts being less numerous may be more concentrated in proportion to the obstructions which may have been prepared beforehand for the enemy, whether, as has been already said, by means of walled

enclosures well loop-holed, or by disposing the troops in such a manner as may enable them to take the assailant in flank and rear, should he make a rash advance after having driven in the chain of skirmishers placed in the first line.

In the attack of forests, every advantage must be taken of local peculiarities, and of any faults that may be committed by the adversary, in the disposition of his troops on the ground he wishes to defend, (these principles are applicable to every description of attack,) such, for instance, as a height commanding a forest, but which has not been occupied, salient angles neglected, passes unguarded, lines of skirmishers unsupported, an exposed flank, an advantageous position unoccupied, or openings apparently difficult to traverse, with but little or no protection from abatis. Such are the principal points which must indispensably be taken into consideration in the attack of a forest, and which should engage the attention of the officer entrusted with the operation.

When the most favorable point for the attack has been decided on, the approach should be made as much as possible without being perceived, and the attention of the enemy diverted by false attacks; he should be engaged on these points, while the principal and true attack is carried on rapidly without any hesitation, and executed with the greatest vigour; many men might otherwise be lost, and it would probably fail. The first success must be followed up by a rapid pursuit, so as to give the enemy no time for consideration; for were the pursuit relaxed, he might by means of his reserves, succeed in wresting the advantages at first obtained.

The first attack should always be made with promptness and impetuosity, without obliging the men to keep their ranks; this attack should also be supported by the troops advancing *en masse* in rear of the reserve; the first detachments that penetrate the forest should form a chain of skirmishers, under the protection of which the reserves and the main body advance.

When the nature of the ground does not permit of the enemy's defensive positions being ascertained beforehand, the assailant, uncertain what counter-manceuvres to employ, should augment the number of his skirmishers and place several sections on their flanks, which extend as the former penetrate the forest, and thus guarantee them from the risk of being out-flanked.

The only part taken by cavalry in such attacks, is, to cover in the first instance the flanks of the infantry, and to follow it at a certain distance, so as to be ready to act as soon as any favorable ground is reached.

Artillery facilitates considerably attacks on forests, more especially when by driving the enemy from his abatis, and from the borders of the forest behind which he is placed, it opens the road for the assailants, but also when it succeeds in shaking him at the point where the real attack is made.

It is by traversing a forest in every direction, by examining attentively, and in the greatest detail, all the peculiarities of the ground as well as the local features, and by considering them all in a military point of view, that we can best arrange the plans and carry into execution the operations, which have for their object the occupation, the defence, and attack of forests.

7. *Occupation, Defence, & Attack of Villages.*

THE occupation of villages is generally determined on, because, with a similar number of troops, a more protracted defence can be made in them than in the field.

The means of defence increase in proportion as the

means of attack are restricted by obstacles; such as ditches, hedges, palisades, and walls. These impediments which usually surround a village, arrest the assailants, favor the defenders, and paralysing the forces of the former, give the latter marked advantages, even when inferior in numbers.

Villages situated at the foot of heights rarely admit of being occupied as posts; but the case is different when they are surrounded with woods, or stand on elevated ground, on rivers, or streams.

The nature of the country determines the position of its villages, both small and great. Their positions may, therefore, in mountainous countries, be in some degree foretold; but that is not so easy in countries consisting of plains and marshes.

Villages may be divided into two classes; regular and irregular. The first comprises those where the houses, built in a certain order, are connected with each other by hedges, and form between their rows what may be called streets.

The second class is composed of houses scattered here and there. They are met with mostly in hilly and marshy countries, their position being generally determined by the direction of the hollows, valleys, and gorges. Should a road or a rivulet cross these hollows, it generally passes through the middle of the village, the houses being on either side.

Villages built on rocky heights, are seldom compact; the houses are often scattered about, but the whole is considered as a village.

The plan of a village situated on the declivity of a mountain or a rocky slope can hardly be calculated on beforehand, the houses being sometimes adjacent, and sometimes scattered, according to the inclination of the ground.

Villages situated on even ground, or in a plain, have often as many streets as there are roads leading to, or branching from them; from which circumstance, a general idea may be formed of their plan.

It is the same with those situated at the intersection of two roads.

By attending to these remarks, the general outline of a village that has not been actually seen, may yet be sketched in a "descriptive note," and should it be afterwards reconnoitred, there will be little left to do, but to see whether its position and extent are correctly given.

It is not always necessary to know the number of houses which a village contains; however, it does often occur in warfare, that officers are required to ascertain this point as well as the number of "fires;" and as it would occupy too much time to count them all, they should obtain returns from every possible source, from the mayor, and any other persons in the public employ.

If this information be required with a view to the distribution of the cantonments, the farm houses should be carefully distinguished from the farm yards, because the latter will contain far fewer men than the former. It then becomes important to ascertain with accuracy the number of "fires" in a village, that the distribution of the troops may be arranged accordingly. From a general map of the country, the nature of the villages may be deduced; it is sometimes shown whether such and such a village contains a church, a castle or chateau, a post office, farm yards, sheep folds, &c. From these indications alone, should nothing more be known of the country, it may be presumed that villages containing a church or a chateau, are more considerable than others; a supposition which is often correct, but may also occasion great mistakes.

Having reconnoitred the environs, the nature, situation, and extent of the adjacent ground, it must be ascertained whether the villages are surrounded with hedges and ditches, with walls of stone or of mud; if it is possible to retrench them, to make them points of "appui," for the army, or if they are calculated to contain a convoy in safety; whether there are any extensive granaries, stables, or cattle yards, suitable for the formation of magazines,

or the accommodation of troops; and, lastly, what number of men and horses could be quartered there. It must next be taken into consideration, whether the houses are close together or scattered, constructed of stone or wood, covered with slates and tiles, or thatched, and easily set on fire.

Whether the inhabitants are in possession of any crops; what grain and forage they have; what horses, carriages, horned cattle, sheep, ovens, &c.

What number of mills there may be; whether moved by wind or water, and what quantity of grain they can grind in a given time; whether they are of wood or stone; whether they are capable of being retrenched, and of serving as posts; in short, to what uses they may be applied.

Mills often increase the facilities of fording rivers and streams from the head of water they require; it is consequently necessary to ascertain: 1st The depth of the water in the upper reservoir when the sluices are closed; 2nd That between the two reservoirs when the sluices are open; 3rd The time requisite to allow the water to run down. These details may assist in planning the attack or defence of a mill converted into a post.

The quality of the water should be examined. It must be ascertained whether it is good for drinking, easily procured, abundant, and suited for horses.

The ditches, hedges, walls, and the enclosures in the interior of the villages, and their nature, should be ascertained. It should be observed whether the church is susceptible of defence; if it and the graveyard are enclosed by walls, ditches, banks of turf, hedges, or shrubs; whether they are raised, or on a level with the ground; lastly, if they can be retrenched and converted into good posts.

Villages should only be occupied when from their nature, they can be easily defended, and when such a defence is useful with reference to the general operations of the army.

Villages hardly admit of defence when the ground in

their neighbourhood cannot be swept, or when their positions give the enemy any advantage, which is the case, for instance, when they are commanded, or when their approaches consist of hollow roads, or of roads affording him good cover.

When on the other hand, the site is favorable, the villages to be defended, are : 1st Those in the line of the position; 2nd Those situated a little in front of this line; 3rd Those forming the salient angles of a position; 4th Any villages situated near the approaches by which the enemy is expected to advance; 5th Those from which these approaches may be swept; 6th Those placed in any defile which the enemy may be obliged to traverse; lastly, those in rear of the chain of advanced posts.

The villages and towns to be occupied when an army advances, or makes a retrograde movement, are those which form a defile, or cover any that the columns may have to pass through; in this case, the troops of the advanced guard should occupy them, and in sufficient numbers to be able to stop the enemy until the arrival of the heads of the columns.

In case of a retreat, the villages should be occupied either by the heads of the columns, when the object is to receive these, and to secure their passage; or by the rear guard when it is wished merely to cover their march, and continue the retreat. These precautions should be observed in flank marches, with respect to every village from which the enemy might debouch, and fall on the flank of the column, in order to stop or retard its march.

It is scarcely possible to make an efficient defence of isolated villages, unless they are situated in defiles, on high mountains, or on the banks of rivers or lakes, when they cannot be attacked on all sides.

In all other situations, the successful defence of a village depends on the resistance opposed to the enemy by the troops posted in front, as well as on the occupation of a certain extent of ground, so as to guard against being attacked simultaneously in front and rear and on the flanks.

A village then should not be defended unless its flanks are protected by the fire directed from a position situated in rear of it, and occupied by troops placed there for that purpose ; and again, the distance between the village and this position should be such, that the enemy cannot penetrate the latter without having first carried the former.

A village should not be occupied if the enemy may with safety neglect it, and leave it in his rear. It might, however, be advisable to hold a village, the occupation of which would be of advantage to the enemy ; but it must be abandoned as soon as he endeavours to turn it, in order to advance towards the principal position, otherwise the troops left there would be exposed to being cut off.

For the same reason, villages, situated in an open plain, which the enemy can penetrate from all sides, and where he could overthrow by a charge of cavalry the troops in position, should either be left unoccupied, or have but a small force, and that only in the event of these villages happening to be in the line of position of the army.

The chain of out-posts is too much exposed to the sudden attack of superior numbers, to allow of its defending those villages which may be on the prolongation of the line, unless their position in gorges or defiles should render them peculiarly capable of defence ; and even then, the chain should be sufficiently close to enable it to receive assistance promptly ; in this case, it is of the greatest importance that the supports should occupy those villages which from their situations might contribute to favour the retreat in case of need, and to stop the enemy as long as possible.

But, on the other hand, in broken countries where the accidents of ground render difficult the approaches to the villages, and are unfavourable for sharp attacks, they may be defended with advantage, and should consequently be disputed with obstinacy.

The officer entrusted with the defence of a village of this description, should divide his force into three parts.

The first part should cover the village, and occupy that

portion of the ground which the troops in the rear cannot ensure from being turned.

It is sufficient to line the hedges, palisades, and walls, with one rank of soldiers, who should be posted more thickly in those places where the fire of the enemy is most effective ; whilst the streets and the other principal passes should be occupied by small compact bodies. The houses are held by detached men, those at least whence the fire may support the troops lining and defending the exterior "enceinte."

The second part, divided into small supports, should be placed behind the points most exposed to the attack, more particularly at those which are separated from each other by whole streets. These posts are intended to support and relieve the advanced parties.

Lastly, the third part should be concentrated in the centre of the village, and, if possible, in an open space equally distant from every point of the front line. This third post forms the principal reserve, its duty being to repulse the enemy on whatever side he may penetrate ; to rally the advanced troops and cover the retreat, in case of being obliged to evacuate the village.

If there is time, all the avenues should first be closed by epaulments, barricades, and abatis ; next, the walls should be loopholed and banquettes constructed behind the hedges ; strong detachments should occupy the churchyard, the chateau, or any other position capable of defence, and from which the fire will most annoy the enemy ; in short, all the means which are afforded by field fortification, should be employed to ensure the efficiency of the defence.

The artillery should be placed in those positions whence it may produce the greatest effect, and on the points where it is probable that the attack on the village may be made ; it is usually placed more particularly at the outlet of the principal street, or in other open spaces, so as to enable it to be easily moved ; when practicable, it should be covered by an epaulment.

The cavalry is placed as a "*corps de reserve*," behind the wings, to ensure them from being turned.

To defend a village efficiently, the first attack should be received with a vigorous and well directed fire. Sorties should not be hazarded unless when the defenders are very superior in numbers, and when the assailants lay themselves open in a marked manner, as, for instance, if they expose a wing, or if the troops making the first attack are not supported ; but these cases are rare. Still, when circumstances permit, sorties may be made ; and the following are the principal rules which are then to be observed :
1st The sorties should be made rapidly, but must, notwithstanding, be conducted with the greatest precaution ;
2nd That part of the village by which the party making the sortie will have to return, should be occupied in force ;
3rd The village should be regained as soon as the enemy has been repulsed, and a rash pursuit should never be ventured on.

The resistance offered to the enemy in a village being useful, only in proportion to the injury he is made to suffer, and the time he loses, it should be prolonged with obstinacy, as long as possible. It is not enough to make a protracted and vigorous resistance outside a village, the ground in the interior should more especially be defended step by step, and the enemy must be made to pay dearly for what is per force abandoned to him.

Should the enemy penetrate at any point, and render the evacuation of a part of the village indispensable, by seriously menacing the flanks and rear, then the men driven from there should throw themselves on the line of houses, walls and hedges, and augment the difficulties of the attack, by presenting new impediments to the advance of the enemy. It is thus that the troops defending a village should fight to the last extremity.

Meanwhile, detachments from the reserve should attack the enemy on those points where he is weak ; and should endeavour to turn and drive him back, in the hopes of gaining more easily one of the points on the new position to be taken up.

The officer defending a village ought not to rest satisfied with indicating beforehand to the officers of his detachments the point on which he intends to fall back and reform in case of a retreat; he should, moreover, take such precautions as will ensure his communications, and strengthen the new position on which he may consider it advisable to retire.

These precautions consist in forming openings by knocking down walls and palisades, by making banquettes, and throwing up epaulments, &c., &c.

If, after having defended the ground foot by foot, the enemy still advances, and penetrates to the further end of the streets and squares, or market places, the reserve should retire, and form in rear of the village, while those troops which remain to the last, use every possible means to prevent the enemy from passing right through it.

So much for the defence; now for the attack. The attack of a village being always a very difficult operation, where success is only to be obtained at the expense of men, it should never be undertaken, unless there are no other means of obtaining the proposed object.

Supposing the attack of a village to be indispensable, whether as a measure of safety, to secure a point of "appui," or with reference to some other project, the assailants should be superior in numbers, for that alone can counterbalance the advantages which the defenders derive from the position.

The local features most calculated to favor the attack of a village, are: 1st A road by which he may be closely approached under cover; 2nd A height from which a fire may be kept up with advantage; 3rd Salient angles which weaken the resistance: 4th The absence or slight elevation of walls, palisades, and hedges. Those villages not protected by troops posted in their rear, may also be attacked with advantage.

The principal attack should not be directed solely on the point uniting all these advantages to the greatest degree,

for the defenders might collect the larger part of their forces at that spot, and thus defeat the project; they should, in addition, be harassed by false attacks, wherever the ground permits, and they are calculated to cause well founded apprehensions.

Before deciding on the attack of a village, it should be ascertained whether, from the nature of the ground and the localities, as well as from the dispositions of the troops defending them, any risk is incurred of being out-flanked.

The following proportions may be taken as an average in the distribution of the troops destined for the attack of a village: one-sixth for the attack, three for the supports and "posts of appui," and the remainder for the reserve.

Cavalry can only be employed in the attack of a village, to cover the flanks, and protect the reserves.

Whenever it is desired to force a village, artillery is of the greatest use, because it serves not only to dismount the enemy's guns, but also to annoy the garrison, by throwing shells on the troops defending the interior, destroying the enclosures of stone or earthwork, and levelling the surrounding hedges, &c.

The attack should be made by detachments of skirmishers advancing in open files, and without firing, on the points to be carried. They should rapidly clear any impediments they may meet with, and drive the enemy from house to house, and from street to street, without giving him time for consideration or permitting him to rally.

Should these detachments be repulsed, they must fall back and endeavour to find cover opposite the point they have attacked, and thence try to shake the enemy by keeping up a well-sustained fire until the arrival of the supports, when they renew the attack.

The supports deploy and advance at a hundred or a hundred and fifty paces distance, according to the nature of the ground. They penetrate by the openings which should by this time have been made; attack and overturn the masses opposed to them; pressing them hard in the

streets, open spaces, &c.; and, in case of failure, the attack should be renewed with fresh troops drawn from the reserve which follows close on the supports.

Should the entry of the village contain streets or open spaces sufficiently large to admit of the defenders being drawn up in line, they must be attacked by the supports, which, followed by the reserve, advance in a compact body, the skirmishers still retaining their open formation.

As soon as the enceinte of a village has been penetrated, the sappers, who in this case should always march with the reserves, open the communications, levelling and overturning all impediments.

When the points of attack are near each other, one reserve placed on the most important point is sufficient; but when they are too far apart, each column should have its own; the object of these reserves being to rally the troops and cover the retreat in case of failure.

But, on the other hand, should the village be penetrated, and the troops be enabled to advance, the reserves will rapidly gain a central position by the principal entrances, as well to assist in routing the adversary's reserves as to seize on those points which ensure the safe occupation of the interior of the village, whilst the skirmishers and their supports pass through and proceed to occupy the exterior line of defence.

8. *On Mountain Warfare.*

THOSE who make war only in their studies and on maps, imagine, that to keep possession of a mountainous country, every approach to it, and every position must be defended, and that the armies so engaged must occupy all the summits.

To hold and defend all the approaches, valleys, heights, passes, and positions, would be to take precautions unnecessarily detailed, and would be a generally defective disposition. To place an army on the highest points of the mountains, is to forget the difficulties of transport by impracticable paths, and the impossibility of provisioning for any length of time any considerable body of troops so posted.

The true principles to be followed when it is desired to defend a mountainous country consist :—1st In never losing sight of the essential points ; 2nd In concentrating all the means of defence at those positions which command the keys of the mountains ; and 3rd In not detaching secondary posts unless they have an immediate relation with the principal object. Nothing is gained by disseminating the troops on all the different points, thus sacrificing them in partial, and often useless combats.

Before laying down the principles which it is proposed to establish on the subject of Mountain Warfare, principles more misunderstood than novel, it is indispensably necessary : 1st To offer some considerations on the nature and general conformation of the ground in mountainous countries, which may serve as a guide in judging of the most advantageous direction which can be given to the general operations ; and 2nd To indicate the method of proceeding to make a detailed examination of the different portions of the ground, and the local features in order to plan the minor operations.

General Considerations on the Nature of the Ground in Mountainous Countries, and on their Examination as a whole.

Extensive mountain chains form the best barriers of a state. It is generally on the declivities of the mountains that the rivers and streams take their rise ; and it is along the banks of the latter that the most practicable roads are

almost always found; sometimes also the waters open for themselves, through the mountains, passages of which the sides are so perpendicular as to be impassable. Mountainous countries present almost everywhere good positions, but they are for the most part liable to be turned.

The reconnaissance of a country of this nature should be commenced at the most elevated part, whence the waters and ravines fall to the right and left, and their origin should be noted. The rivers, streams, and principal ravines should then be followed as far as possible, specifying their numbers and extent; the nature and direction of the different chains of heights which traverse, encircle, and cover the country must be observed; their relative elevation, and the different branches which defend the outlets from them; their communications, and the courses of the rivers and torrents.

With respect to the mountains, their chains must be traversed to ascertain their development and points of connection, as well as the facilities or difficulties which troops would meet with on their slopes and declivities; and lastly, some positive data should be obtained on the points to be occupied, the communications to be opened, destroyed, or closed, by traverses, redoubts, or abatis, either with a view to operating on a projected plan, or simply to secure the front flanks and rear of the positions to be occupied.

In the descriptive notes to be annexed to the sketch of a country, the nature of the roads should be specified, and exact details given of those which are fit for carriages, artillery, horses, and mules; and of those only suited for foot soldiers, as well as of the period of the year when they are most practicable. In these notes the most cramped and difficult parts of the defiles and encampments should be described; and observations added on the rivers, streams, torrents, and ravines to be passed, and which become swollen at every fall of rain or on any considerable melting of the snows; indicating the best means of overcoming the impediments which may have to be encountered.

In high mountains, such as the Alps and the Pyrenees, roads are rare, because the valleys alone are inhabited. If the valleys, as well as their approaches and outlets, and the passes that have been opened are well studied, the examination of the mountains may be dispensed with, excepting their roads and beaten paths.

Detailed Examination of the different parts of the Ground in a Mountainous Country, and of the Local Features to be met with there.

In the detailed examination of a country abounding in mountains, those which command the others should be considered first; their positions separately, as well as relatively, to the others; the means of reaching their summits, and the most important parts to be occupied in a general point of view, as well as with reference to any particular object. It must be noted whether their summits consist of bare rocks or are covered with woods, wholly or partially, or whether they are clear: whether they form posts which it would be advantageous to occupy; and if so, with what object.

The crests, necks, passes, or passages, must be next examined; the roads and paths which traverse the summits and sides of these and the valleys. It must be ascertained whether or not the valleys are practicable, or if they merely present difficulties; whether artillery and cavalry can traverse them, or only infantry. The outlets and defiles leading to them should also be carefully examined, and it should be remarked whether they may become favorable or the reverse.

The nature of the declivities and slopes of the mountains must be noted, also that of the woods should there be any; and of the streams, pasturages, towns, villages, hamlets,

castles, farms, mills, and detached houses. Are they capable of being converted into advantageous posts in a military point of view, and what position would be most suitable for encamping? It must be observed, whether there is any table land or plateau beyond which the enemy might advance and by occupying it thereby command a considerable extent of ground. There may also be other table lands which might assist the enemy in his enterprises, were he to seize them; those points must be taken into account by which the enemy might turn the posts or positions which it is proposed to occupy, and by which he himself might be turned; and search should be made for some unfrequented paths or passes which would facilitate the accomplishment of this object.

It should be ascertained whether the heights of medium elevation are practicable, and if they may be occupied with advantage; whether posts of observation and batteries could be established there. The nature of the communications with the ground in rear must be looked to; it must be noted whether they are short and easy; whether they are liable to be intercepted by the enemy after the mountain range has been penetrated; what are the best means of ensuring their safety; and accurate information must be obtained as to the different periods at which the mountain passes are open, or are closed by the snow.

The local objects which may be met with in mountainous countries, and which should be examined in the most minute detail, are the following :

Roads, Defiles, Rivers, Ravines, Vales, Valleys, Towns, Villages, Hamlets, Isolated Houses, Forts.

ROADS.—There are few mountain-ranges where roads may not be found extending along their whole length; and these, though little frequented, may often be useful. On the

plateaux also, may be found roads little used, but, nevertheless good, even till late in the season. In mountainous countries the roads are generally steep and narrow, and, consequently, but ill adapted for the transport of artillery. They may be divided into three classes, namely,—roads practicable for carriages; those which are fit for beasts of burden; and those suitable for foot soldiers only.

These roads are often obstructed by snow. It is important to know, as has been already remarked, the periods or seasons at which they are open or closed. Roads are more or less open in certain places, and sometimes so steep as to render it difficult to traverse them; some are straight, others crooked or winding.

In countries covered with hilly plains, the roads are generally hollow when they approach the towns and villages; and when two rivers or two valleys some leagues apart, run parallel to each other, the intervening space generally consists of a mountain, whose slopes are furrowed with hollows and hollow roads, but on whose crest, practicable throughout its whole extent, may often be found a better road than those on its sides.

The high roads flanked by rocks are often barred across by works in masonry, but such barriers are, in reality, only calculated to impede for a time the march of the enemy's columns, and that of his carriages; they seldom extend beyond the narrow limits of the passes they close, and do not protect their defenders either from being turned, or from the plunging fire directed from the neighbouring heights.

To enable such works to offer a long resistance, they should be casemated and closed in rear as well as in front; they are then sheltered from fire, and from stones rolled down from the heights commanding them, and their defenders are no longer in danger of being turned, but when well supplied with provisions and ammunition, will disconcert the enemy's operations, either by stopping the advance of his columns, or by interrupting his communications.

Common paths may sometimes, by a little labour, be converted into excellent roads: the people of the country often look upon them as impracticable for troops when they are narrowed by ditches or other impediments.

Hollow roads, which cannot be filled in, should be used as seldom as possible for artillery or baggage waggons, if one carriage were to break down or get fast in the mud, the remainder of the column would be stopped at once.

DEFILES.—Defiles are of frequent occurrence in mountainous countries; they may be more or less cramped, more or less practicable, and frequented. An accurate knowledge of their breadth and length is necessary, in order to estimate the numbers of infantry and cavalry which can enter them abreast, and the time that will be occupied in passing them.

It must be ascertained whether their direction is straight or winding: whether at their entry or exit there is any advantageous spot where a given number of men might be drawn up in order of battle: whether batteries or posts could be established there, capable of covering and protecting a retreat, and if there are any neighbouring positions which should be occupied: if there are any passes which ought to be seized, either with a view of debouching on the enemy, or of stopping him; which of them, if any, should be fortified; and which are suited for artillery, waggons, and other equipages; which for cavalry or infantry: whether their communications are direct or the reverse, by the flanks or the rear. It should be known how long it will take to reach the highest part of the crest or summit: and, lastly, whether any new passes can be opened.

RIVERS.—Rivers proceeding from mountains are rapid and shallow near their sources: their banks are almost always bordered with heights, the prolongation of those whence they take their rise.

These rivers become swollen with extreme rapidity, either from heavy rains, or from periodical floods, of which

there are generally two every year; the first in March or April, when the snows begin to melt, and the second about the month of July, when the summer heats complete the conversion of the snow into water. It is important to have accurate information on the subject of these floods, so that the movements of the troops may be regulated accordingly. The bottom of rivers proceeding from mountains is generally good; they are fordable in many places, but the fords are generally obstructed by large stones, rendering them very inconvenient for horses, and impracticable for artillery and carriages.

RAVINES.—In mountainous countries ravines are often and suddenly converted into torrents, which vary with every storm of rain; it should be ascertained in what weather these storms occur, and if the waters run down quickly. When the torrents cannot be sounded, information should be obtained from the country people as to the breadth and depth of the water; if the bottom will permit of cavalry passing without risk; if there is any danger of the banks falling in; and whether, from the melting of the snows, or other sudden rise of water, the ravines become converted into torrents.

Ravines, inconsiderable at their commencement, often become precipices. Those whose sides are level with the ground are generally the most dangerous, unless their position is known, but they form excellent points of "appui." Ravines are occasionally met with of which the outlets are quite practicable, and their bottoms fall in a gentle slope, and are dry, at least in summer.

A ravine of this description may serve as a road for a column, so that it is important to know their direction, that is, on what road they terminate, and the amount of labour that might be necessary to render them partly or entirely practicable for the passage of cavalry, or of infantry only; their breadth throughout should always be well known, especially when they lead to the banks of a river or stream. Prudence requires that the outlets from such ravines be guarded by detachments.

It is generally essential to examine attentively the nature of the ground forming the sides and bottom of a ravine; they may be of rocks, of earth, mud, rolling stones, gravel, or sand; it should be observed whether the ravines are wide and deep, sloping gently or scarped, whether a ramp may be made in the steep banks to facilitate the passage of the troops.

VALES.—Vales deserve great attention. It should be ascertained whether they, as well as the valleys surrounding the heights, are extensive, inhabited, wooded, cultivated, intersected by rivers, streams, and ravines; whether they produce grain and forage; if they can be traversed by troops conveniently, and in safety; whether the mountains and heights which form the vales, are at such a distance that the columns passing through the latter would not be annoyed by the fire of the enemy posted on the crests; and above all, whether it would be in his power to shut them in.

Those valleys which are intersected, either longitudinally or transversely, by a great number of obstacles, streams, and winding ravines, are often impracticable for troops, on account of the multiplicity of bridges to be constructed and of passages to be opened.

TOWNS AND VILLAGES.—The towns, villages, hamlets, and detached houses, situated at the foot of heights, or in hollows, are rarely susceptible of being converted into posts, but, when circumstances require their occupation, their defects should be obviated, or at least, remedied by retrenchments.

Retrenchments have the advantage of producing an effect at once moral and physical: they arrest the impetuosity of the adversary, while they cover the troops defending them; they direct the attention of inexperienced officers to the important points, the employment of the troops and artillery being determined by their situation. But, on the other hand, retrenchments lose their value, unless made use of with judgment, as, for instance, when they are badly placed, when their construction is defective, or again, when they are badly defended.

A feeble defence is but too common, and arises from the infantry being taught to use their arms only when at a distance; in their not being inspired with equal confidence in the bayonet, as in the fire of musquetry: and lastly, in their not being sufficiently practised in fighting hand to hand.

The result of this neglect is, that, should the attacking party not be disconcerted by the first fire, the defenders become panic-struck, and seeing the only mode of defence they are acquainted with, attended with no result, they allow the work to be carried at the very moment when the assailant occupied in passing the ditch and scaling the parapet is in disorder, and cannot make use of his arms, whilst every advantage is in reality combined on the side of the defenders. An intrepid leader, making his men mount the parapet, when the enemy throws himself into the ditch, receives him with the bayonet, and does not fear the escalade of a well constructed work.

FORTS.—Forts built on mountains and rocks are sometimes so elevated as to facilitate the approaches of the assailant, the guns being able to deliver only a plunging fire; the greater number of these posts are often without water, especially when they depend on springs or wells, which dry up in summer, and then the garrison reduced to the rain water, which soon stagnates in the cisterns, is obliged to capitulate.

Having explained the method of examining the different descriptions of ground, and the local features of mountainous countries, and having shown the military point of view under which they should be considered, it remains to lay down the principles by which all officers should be guided in mountain warfare.

In this description of warfare, the selection of officers entrusted with the command of separate corps is of the utmost importance, for on them depends often the success of the greatest enterprises; and the more so, as the natural obstacles of the country prevent the Commander-in-chief

from perceiving and remedying any errors that may be committed. It is principally in mountainous countries that the talents of individual officers shine forth, and that they find many occasions of distinguishing themselves, as much by giving proofs of their intrepidity, as by their unshaken bearing in critical situations.

In mountain warfare, the only merit that the generals have, or can have, is that of planning the general dispositions and combinations; nevertheless, their task is great, for they are responsible for all miscalculations, and for errors or tardy measures which might interfere with the promised result of the best calculated combinations, and with the proposed plan of operations.

The month of March is the most favorable period for commencing military operations in mountainous countries, because the cold is no longer sufficiently severe to stop the movements of the aggressor, whilst it is insupportable for him, who, acting strictly on the defensive, is obliged to keep the heights, and who finds himself confined to his post, without shelter, without wood, fire, or any thing to alleviate his hardships.

In the month of March, the snow is still hard enough to render level the approaches to the heights, covering the fields and filling the ravines, in such a way as to allow of sections marching over places which it would be difficult in summer to pass in single file.

The rules of mountain warfare prohibit the entry of the valleys until the heights are mastered. This principle is good, but is based on the supposition, that the enemy would occupy the heights, and that these command the valleys to be traversed.

In a tactical point of view, and when a manœuvre is to be executed on a field of battle, the advantage of commanding ground is too great to admit of the preference being accorded to an attack directed from lower ground against that which is higher: but the principle should not be here too rigorously applied, nor should it be

supposed that the command of the watershed necessarily gives that of all the communications; indeed, it is quite otherwise, when, in conducting operations in a mountainous country, possession of an entire valley is obtained with the view of gaining ground in the mountains, and of pushing the operations beyond them.

In this case the attack should be directed from the plain, because measures on a larger scale can be taken there, whilst those of the adversary, who is on the defensive, diminish, and his facilities of acting are lessened, as he is driven back.

The following may in this case be considered as principles: 1st Both systems should be employed simultaneously; that is to say, the troops which are in the plain should be directed up the valleys, whilst the heights surrounding them should be secured; 2nd The selection of positions to be occupied, and the direction of the movements should not finally be decided on, until an exact knowledge of the contour of the mountains is obtained, as well as of the nature and situation of the principal valleys it may be wished to penetrate.

Among high mountains, where it is only by following the direction of the valleys that any progress can be made, and when the difficulty of procuring supplies prevents any rapid movements, the effect of any manœuvre is not felt at so great a distance as in open countries. This circumstance alone, which is owing to the nature of the ground, is an undeniable proof of the truth of the principle, that in a strategical point of view, the possession of the plain leads to that of the mountains, where each step in advance is made only at the expense of a fresh enterprise, and where the numerous variations in the configuration of the ground require different dispositions, adapted to the various local peculiarities.

It is the genius of the officer entrusted with the direction of the operations that enables him to conform to these natural peculiarities of the ground, and above all, to avoid

the dangers of a critical position, or a false movement, which are the more to be dreaded in countries abounding in obstacles, because any rapid manœuvre, which might otherwise obviate the disadvantage of a defective disposition, would be impeded by the nature of the ground.

In an open country, the dispositions of the enemy may be discovered from a distance, and his intentions may be foretold; and should his movements be such as to give no indication of their object, there is at least both time and means to prepare for every contingency; should he make any rash attempt, he may be punished for his temerity, advantage being taken of the opening he may give.

This consideration shows the great advantage of the attack over the defence in mountainous countries, and inculcates the necessity of going back to principles, whether in the study or practice of the science of war, in order to be able the better to seize the true spirit of the rules, and thus avoid fatal mistakes when the necessity of applying them occurs; then it will be seen that a movement which would in a plain be imprudent and dangerous, ceases to be so among mountains.

Acting on the offensive produces, moreover, a moral effect on the mind of the soldier, advantageous to the aggressor who has the resources of art in his favour: in short, he who attacks, forms his plan, decides on his movements, unites his forces on a given point, and gains a superiority, which he who is attacked, can only hope to counterbalance by paralysing the means of his adversary, and preventing the deployment of his forces. But to succeed in this object, he who acts on the defensive should avoid every useless combat, and only offer resistance in advantageous positions, employing troops of different descriptions according to the nature of the ground, and seizing without hesitation, the favorable moment for assuming the offensive.

No where will audacity perform more prodigies than in intersected countries, and more especially among high mountains, where the only affairs are those which are

undertaken and decided without warning, and where surprise, the general result of boldness, paralyses the forces of the adversary at the most critical moment.

Generally speaking, the only positions which can be defended boldly, and with some hopes of success, are those which afford their defenders the means of defeating all the projects of the assailants; that is to say, the former should be safe from a surprise, a masked attack, or any sudden manœuvre, &c.; but these qualities are seldom found united in a position among mountains. However, as the general operations sometimes require the occupation of a subordinate line, or the defence of the entry or outlet of some lateral valley, to impede for a time the movements of the enemy, by occupying posts, which must yield at last to his combined efforts, positions taken up with this intention, should be at least protected from being enveloped by the superior forces of the enemy, or from being attacked by a cross fire, which would oblige the defenders to evacuate them; and the ground should be such as will not admit of an attack disproportioned to the means of defence; moreover, the advanced posts should be placed at such distances as to prevent all surprises, and to stop the enemy long enough to enable the officer commanding the main body to be informed of his projects, and to take measures to frustrate them.

The avenues leading to a position, and indeed, every mode of approach, should be visible to the troops charged with its defence; they should be open to the fire of the artillery, and commanded, if possible, from points selected with reference to the local peculiarities. The reserves should be sufficiently near the points of attack, to allow of their being brought up to support them at the decisive moment, yet they should be kept at such a distance as will guarantee them from the effect of the first fire, or from sharing in the first reverses. Lastly, a safe retreat should be insured; and if this must inevitably lead through a defile, it ought to be occupied beforehand, otherwise the

loss of the position might lead to a total defeat of the troops defending it.

There is no lack of principles to serve as guides in mountain warfare, but their application varies with the different cases that present themselves ; from this it results, that faults are repeatedly committed against the true principles, not so much from their being unknown, as from their being erroneously applied ; and as men are generally more apt to exercise their memory than their judgment, they are content with remembering the rules which have been handed down to them traditionally, without investigating their meaning, and then, when in complicated circumstances, things are presented under different aspects, they are unable to decide on the rule which applies to the case in point.

The astonishing campaign of 1799, during which the belligerent armies disputed the possession of the most elevated parts of Europe, is peculiarly interesting, and the more remarkable, in that it presents the means of victoriously combating the misconceptions which are common with respect to mountain warfare, and which it is important to demolish, because men, otherwise well informed, regard them to this day, in the light of incontestable truths.

In order the better to appreciate the system which ought to prevail, not only with reference to the defensive positions to be taken up in mountainous countries, but also to the modes which should be employed in order to gain these positions, it is necessary to explain and analyse the systems which have been followed up to the present time ; these may be reduced to the following : 1st Occupying all the valleys ; 2nd Taking up a position which bars the principal valleys right across ; 3rd Taking up a position lengthways, along the principal valley ; 4th Occupying simultaneously the valleys and the mountains ; 5th Occupying the mountains, and observing the valleys ; 6th Taking up a central position at the point where the different lines unite, and keeping simple posts of observation in the valleys, on the passes and paths in front, flanks, and rear of the position.

Occupation of the Valleys. Inconveniences of the System.

High mountains, as has been already observed, are traversed by valleys, having their origin in the principal crest, and which, from their first branching off, have seldom any other communications than the paths across the steep sides which enclose them. The lines of operation and communication follow these valleys, and unite as they do in the same direction : from this it follows, that several roads lead to the same point, and that he who wishes to advance on the offensive, from the plain to the mountains, may choose his line of attack, and throw the principal part of his forces on that outlet which he may think most favorable for his designs ; whilst his adversary, who is awaiting him in the several valleys, among which his forces are divided, can only gain the valley towards which the assailant is advancing, by re-ascending to their common source, or at least by making a considerable circuit ; otherwise, a military occupation of all the valleys would require that the troops destined for the particular defence of each, should be sufficiently numerous to repulse every attack without any assistance, for that which might be furnished from the neighbouring valleys, would never arrive in time.

But what a prodigious quantity of troops would be necessary to carry out this system to the full extent in a mountainous country ! And how are these troops to be subsisted ? For in sterile countries it is not sufficient to proportion the quantity of provisions to the number of fighting men ; the subsistence of the men and horses employed in the transports of stores, &c., must also be taken into account, and they often consume the greater part of their charge before reaching their destination : and even supposing the magazines to be capable of supplying the want of resources in these inhospitable regions, thus

obviating these objections, the impossibility of finding in the mountains positions calculated to stop the enemy, would still remain. There is no one position which he is obliged to attack more than any other, for the several different roads lead to the same point, no position can be strong enough from its situation to be independent, nor can the flanks of any be guaranteed as perfectly safe; isolated, from the nature of the ground, they are all exposed to be turned, and an enemy by leaving them, will seldom endanger his communications, the ground being unfavorable for any prompt or vigorous enterprises.

Position taken up across a Valley; Defects of this Position.

Every position which bars a valley has the following defects: 1st That of having its wings resting on heights which command them; 2nd That of having the line divided by the waters that run in the bottom of the valley, when an attack made with superior forces, either from the mountains upon the wings, or on one portion of the centre which is divided by the waters, would be decided in favor of the attacking party, and the more completely, inasmuch as the remaining troops of the corps on the defensive are generally taken in flank or rear, or else neutralized.

Position taken up along a Valley; Advantages and Disadvantages which this Position presents.

A position taken up along a valley has the following advantages; 1st Its front is covered by the streams running before it; 2nd Its wings rest on one side, on the gradual elevation of the ground, and on the other, on well guarded

defiles in the bottom, or on torrents, or the lakes which receive the waters of the lateral valleys.

Such positions are difficult of approach, because the points by which the enemy might debouch from the opposite mountains, and crossing the water, attack the defenders, are marked by the nature of the ground itself, and admit of no alteration; whilst defence is easy for him who occupies the valley, his movements being more free; and should the assailant even attempt an attack by a lateral valley, this would not ensure him the conquest of the principal one; for he who occupies it being able to unite and deploy his troops at will, enjoys a decided advantage over an adversary, who debouches by a narrow gorge from which he dares not venture far, fearing to find himself cut off in case of a reverse.

We may here observe, that one of the errors in military matters, which arose with the cordon system, is, that the defenders of every post, strong or weak, forming part of a line of any extent, and whether in a secure or dangerous position, consider themselves turned, out-flanked, and obliged to retire, as soon as the enemy has penetrated at one point, and have no hopes of safety, until they find themselves posted on a new line parallel to the first.

It is especially in mountainous countries that the soldier fears being turned; not being able to embrace at one view the variety of movements on both sides, his judgment becomes as limited as his sight, and he experiences uneasy feelings because he is unacquainted with the nature of the ground: whilst it is precisely among mountains that there is less danger to be apprehended from being turned, than elsewhere, because that manœuvre can only be executed by small columns or isolated detachments, which, being confined to difficult mountain paths, may be stopped by a small number of men.

Whilst decisive blows are being struck elsewhere with superior forces, the surest way to carry positions taken up along a valley is, to turn them; should circumstances

permit, the valley itself may be attempted, by an attack directed against its outlet, which should be penetrated with superior forces.

To facilitate this operation, the means of resistance of the enemy should be paralysed, by attacking his flanks and rear simultaneously, with small columns, directed for this purpose by the lateral valleys; and to avoid all risk, the advance of these small columns should be regulated by that of the main body, they should be within reach of it, and follow in echelon. Should any obstacles frustrate this attempt, the crest where the valley takes its rise may be ascended with almost the certainty of encountering but feeble detachments there, since it is impossible, as has been before said, to provide any considerable body of men on these isolated posts with stores and provisions for any length of time, when, moreover, the difficulties of the ground would not admit of the defenders taking efficient measures to protect themselves from any concealed movements. Thus, the assailant climbing with superior forces the mountain barrier, gains the commanding points, whence he overwhelms his enemy posted in the low grounds; or, again, as all the valleys take their rise from the same crest, and are there close to each other, the assailant having reached the summit, finds himself in a position which allows of his passing from one valley to another much more rapidly than his adversary, who is shut up in that which he occupies; and the slightest success will lead to the possession not only of the principal valley, but also to that of several of those adjacent.

From what has been just shown, it is evident that a valley occupied lengthways may be easily gained, either by directing the attack against its outlets, and penetrating with superior forces, or by obtaining possession of the mountains surrounding it.

It may be remarked amongst the inherent defects of a position taken up along a valley, that its occupation must be precarious, because a road which serves as a field of

battle, is a bad point to occupy, and the probability of success can never be in favor of him, who, placed on a cramped and perpendicular line, is obliged to fight at once on its two extremities as well as to its front and rear.

When from the nature of circumstances it is necessary to occupy such a position, the only hopes of being able to do so with advantage, depend on taking the initiative; and nowhere may this means be employed to more advantage than in a mountainous country; for, in consequence of the numerous obstacles, it is very difficult to execute any counter manœuvre, the paucity of communications, and the difficulty of conveying intelligence, occasioning an incalculable loss of time; and, as it often happens, that circumstances change before the execution of any settled plan, the assailant, by pushing on vigorously, may succeed in obtaining a series of advantages, of which it would be very difficult to deprive him afterwards.

Positions taken up simultaneously in the Valleys and on the Mountains; Inconveniences with which they would be attended.

The mountain ranges descend, by stages, in such a manner, that those adjoining the valleys are always commanded by more elevated summits. If, to obviate this inconvenience, which arises from the nature of the ground, the valleys are occupied and the surrounding heights guarded at the same time, an immense extent of ground must be embraced; for each range being commanded by that beyond it, the troops will be all dispersed by the time the highest is occupied; from this results a multiplicity of detachments and posts, the greater part of which, isolated from the broken nature of the ground, without intermediate communications, and too far apart to afford each other mutual support, give every advantage to the assailant, who,

pursuing some one direction, masked by the ground, advances with the mass of his forces, against one point, carries it inevitably, and takes in rear all the scattered troops confined to their respective posts, and guarding those approaches alone which lead directly to them.

If the attack made in the mountains should succeed, the assailant gains the heights which command and adjoin the valleys, as well as the roads and paths which turn them; thence he may make a descent on the communications of his adversary, or else establish himself on the neighbouring mountains, in short, he obliges him to evacuate the valley, either by turning him, or by main force; and in either case, the results are generally attended with circumstances which are very disastrous to the party attacked.

Positions taken up in the Mountains, the Valleys being merely observed.

By merely observing the valleys, while the mountains are occupied by the main body, the danger is incurred of the enemy making a false attack, with small detachments, on the troops holding the mountains, whilst he overwhelms, with his principal force, the posts of observation in the valleys; intercepts the roads and paths leading to the mountains; stops the reinforcements and supplies of all sorts on their way; menaces the line of retreat of the troops stationed there; and, in short, forces them to abandon their positions.

But what system, then, is to be followed, when a corps is obliged, by circumstances, to remain on the defensive?

That in which the valleys are occupied with the main body, in order to command the mountains, and in which these are merely observed with small detachments, for the mountains command the valleys; and these alone con-

tain the roads suitable for the movements of troops, and practicable for the transport of provisions and stores.

Such is the outline of the system which we will now proceed to develop.

A Central Position taken up at the point of junction of the different lines, whilst simple Posts of Observation are kept in the Valleys, on the passes and paths in the front, flanks, and rear of the position.

Amongst other peculiarities, which, in mountainous countries, depend on the nature of the ground, is this, that an operation may be directed against any point by several different lines. The main object, then, is to find a central position, from which these different lines may be most easily reached; and this can only be found at their point of junction. As it is, however, indispensable to be in possession of good information with regard to the projects of the enemy, in order to avoid making false dispositions, it becomes advisable to place posts of observation in all the valleys, and all the passes and paths in the front, flanks, and rear of the position.

Then, the intention of the enemy being ascertained, and it being known that he is sufficiently advanced in one direction to prevent his changing to any other, he may be attacked without danger, either on the line of operation which he is following, or any other which may promise advantageous results.

By defending a mountainous country on this system, a superiority over the adversary is obtained; having a knowledge of the country, and time to take all necessary steps to establish magazines and to organize the transport service, there is no excuse for not acting with celerity and

vigour, whilst the enemy can, with difficulty, collect his subsistence, and everything must follow him on that line alone by which he advances.

In the defence of one's own country the attachment of the inhabitants will offer valuable resources, and of more importance in a mountainous country than in the plains.

By pursuing the above system, forces may be opposed which are more numerous than those of the defenders, and far superior to them; for a difficult country can be penetrated by isolated columns only, incapable of affording each other mutual support, and constantly exposed to unfortunate accidents, more particularly if a vigorous attack is directed against that column whose defeat will alone suffice to oblige the others to retreat.

But to obtain such a result, the resolution must be prompt and the execution rapid, so as to prevent the other columns from joining before the complete defeat of the one attacked.

A central position is, moreover, preferable to any other line of defence on the score of provisions. The requisite means of transport are not so great, because, as the attack will only be directed against the divided forces of the adversary, the position will only contain a number of troops proportioned to that intention; and magazines will be more easily formed, because, by occupying the points of junction of the different communications, the convoys may be brought in by different roads, without the necessity of distributing the supplies over unconnected lines.

It is, then, only by acting offensively from a central point, that the mountains can be held; and this maxim is too well founded to be neglected. The words "acting offensively," are used designedly, because it might be thought from the explanation given of the advantages of a central position, that the enemy should there be waited for: far from that, we repeat, that all positions among mountains, not excepting those on the very crests, are exposed to the same inconveniences, they are too exten-

sive, and possess too few resources; the detached posts, not being independent, are obliged to preserve a passive attitude, without being able to manœuvre; the modes of retreat are difficult, and by paths often impracticable; such are in part the defects which characterize those positions.

It would be highly inconsistent, and, indeed, totally against all principle, to remain fixed in a position when the enemy might unite his forces in front of it and assail it from all sides; for when it is advanced, as a principle, that a position should be taken up, or reserves established at the point where several roads branch off, it is not with the view of awaiting the enemy, nor of making a stand there, but in order to secure the choice of the different directions leading to him, so as to be able to overwhelm him by making a descent at the most favorable and decisive moment.

As soon as the adversary is repulsed, those detachments that were guarding the approaches of the position regain their posts, and the main body re-establishes itself at the point whence it started; these offensive attacks should be repeated as long as it is necessary to act on the defensive.

These considerations prove the immense advantage of the attack over the defence in mountain warfare, with reference both to strategy and tactics. He who takes the initiative, by acting decidedly on the offensive, will always remain master of the field of battle, and, finally, of the theatre of war. The officers who have to operate in mountainous countries should be thoroughly convinced of this truth.

In support of these principles, we may cite the opinions of the Duc de Rohan, of Lieut.-General Le Courbe, and that of the Archduke Charles, on mountain warfare. The Duc de Rohan, who commanded the French army in the Valteline, in explaining the dispositions made with a view to prevent the junction of the Spanish and Imperial armies, says: "This obliged me to send out persons experienced in

“ those matters to reconnoitre the passes, which were found
“ to be innumerable ; and then, indeed, it was ascertained
“ that mountains are like an open country, having not only
“ the customary roads, but many others, which, although
“ not known to strangers, are familiar to the inhabitants of
“ the country, and by which one may always gain any
“ desired point, in spite of those who would oppose such a
“ design ; so that a wise commander will never be anxious
“ to guard the passes, but will rather resolve on waiting for
“ the enemy and giving him battle in the field, which method
“ may appear strange to those who have not had experience
“ of its success. Thus, on the present occasion, where the
“ mountains were considered as safe as so many fortresses,
“ it was found that they were open on all sides, and that ten
“ new passes were discovered for every one that was blocked
“ up, so that not one good army, but several, would have
“ been necessary to guard such a country.”—*Campaign of
the Duc de Rohan in the Valteline, 1674.*

Extract of Notes on Switzerland, addressed to General Berthier, by Lieut.-General Le Courbe, 22nd April, 1800.

“ Taking into consideration the topographical situation
“ of Switzerland, the defiles by which the enemy must pass
“ to reach it, the difficulties he would encounter with regard
“ to subsistence, and the stratagems by which, in certain
“ positions, small bodies of troops might stop a considerable
“ number, &c., I estimate, that with seven or eight
“ thousand men, the outlets of the Southern Alps and of
“ that part of the Rheinthal next the Grisons, may be held
“ until the army of the Rhine shall have passed the Lake of
“ Constance, without including what should be left in
“ camp at Bâle and in the Friekthal, in order to escort
“ convoys.

“ The Canton of the Valais could with difficulty be held ;
“ the different approaches from the Milanais and Piedmont
“ show at a glance, that many men would be necessary to
“ keep such a country.

"Five or six battalions will suffice for the defence of the valley of the Rhone, but they must not be scattered ; they must be kept in the valley ; nothing more than simple posts being on the crests of the mountains where the passes are.

"In an invasion of the Valais, or even of the valley of the Reuss, the chances are against the enemy ; for, should he have a considerable body of troops, they would starve.

"The country offering no resources, he would be obliged to pass his convoys over the mountains on beasts of burden, or to have them carried by men, the inconvenience of which is evident.

"If, on the other hand, the enemy has but few troops in the places above mentioned, a small reinforcement would enable us soon to retake all the posts we might have lost ; for these mountains, the St. Bernard, St. Gothard, &c., present no really good plans of defence : he who attacks, is almost always sure of success.

"It is in the valleys that the mountains must be defended.

"This reflection will perhaps appear surprising to those who have not made war in the mountains ; but should you have strong reserves at the outlets of a mountain, throw them on the enemy at the moment when, having just had seven or eight leagues of ascending and descending, he is overcome with fatigue, and in such a case, it is pretty certain that he will not reascend, but will be taken prisoner. I could cite many examples of this."—*Précis des Evénements Militaires, M.D.*

In a military work entitled "*Campagne de 1799 en Allemagne et en Suisse*," attributed generally to the Archduke Charles, the author thus expresses himself : "The theory of mountain warfare has, perhaps, never been presented to observers in so clear and striking a manner as during the Campaign of 1799, when the belligerent armies disputed the possession of the most elevated countries of

“Europe. This period, particularly distinguished by the rapid progress of the operations, gives to the campaign a new character.

“Instead of traversing the crests on lines parallel with the original position, as generally happens in countries of this description, where it is only necessary to clear one chain to find another parallel to it, or to descend into the plain beyond, the positions taken as starting points were perpendicular to the run of the mountains, and it was endeavoured to master them by traversing the chain lengthways, and by following the direction of its branches.

“The results of these dispositions lead to the following observations : 1st The possession of the flat country prepares and assures, on strategitical principles, the occupation of the mountains ; 2nd The march of considerable columns, and, consequently, the lines of operation, can only be conducted by the principal valleys ; 3rd A passive defence of mountains fails in its object, and these can only be maintained by attacking the enemy as he advances ; 4th Offensive operations, to be efficacious, should be directed simultaneously in the valleys and along the heights flanking them ; and it is from the accidents of ground and the respective positions that must be decided, which of these two directions leads to the real attack.”

Again, the experience of both ancient and modern times is in support of these principles, and of these observations on mountain warfare.

It is from attention to these same principles, and from knowing how to apply them properly, that in Spain, Sertorius constantly beat Metellus and Pompey ; that in Albania, Scanderberg withstood the forces of the Ottoman empire ; that in the Valteline, the Duc de Rohan remained master of the country, notwithstanding the combined efforts of the Spanish and Imperial armies ; that in the Eastern Pyrenees, Ricardos arrested the combined efforts of the French ; that, lastly, during the astonishing cam-

paign of 1799, we saw the Generals Molitor, Desolles, Le Courbe, Soult, and Massena, occupy and defend the Tyrol, Switzerland, and the Grisons, and completely defeat in these countries the Russian and Austrian armies.

These examples prove, undeniably, that from the earliest periods to the last campaigns of the revolutionary war, offensive operations in mountain countries have always obtained decided advantages, and that the only possible mode of holding the mountains, is by an active defence, accompanied by offensive movements.

9. *On Positions.*

BY a position, is meant a situation occupied by a body of troops, to effect some military object.

Success in war depends on the good choice of positions; the ground presents them, but it is for the skill or capacity of the officers to appreciate them, and determine their selection with due regard to circumstances and the objects in view.

A position is taken up either to protect some portion of a country, or to enable troops to advance with advantage to the attack of the enemy, and to oblige him to yield the ground he occupies.

Every position is either offensive or defensive, and may become a field of battle. The front of a position should never be greater than that of the troops occupying it; after deducting the reserve, the chain of advanced posts and their supports, a sufficient number should remain to occupy in compact order, the whole extent of the front and the flanks, so as to defend every point of the position with a sustained and deadly fire.

As it is not intended in this work to treat of the

details of camps, nor of the rules of castrametation, information on these branches must be sought for in the "Instructions" of the Minister of War, published in November 1803, giving rules for the encamping both of infantry and cavalry; we proceed to lay down the principles by which officers should be guided in the choice of position.

To appreciate thoroughly the advantages and inconveniences of any position, those which adjoin it should also be known, that is to say, its peculiarities must be considered in relation to all that surrounds it.

By examining in detail a position where a body of troops is to be posted, as well as the surrounding country, the strong and weak points may be better appreciated; and, bearing in mind the necessary relations between the movements of the troops and the nature of the ground, it becomes easy to ascertain whether the position under examination is suitable for the object in view, be it to cover a country requiring protection, or to facilitate offensive operations.

In either case, it is necessary to consider, 1st whether the position is calculated to fulfil the proposed object; 2nd the details of the ground; 3rd the modes of approaching it and of retiring from it; 4th the communications; 5th the local features in front and on the flanks; 6th whether its extent is proportioned to the number of troops destined to occupy it; finally, how it is to be attacked and defended, what obstacles may be opposed to the enemy, what difficulties may have to be encountered, and how these are to be surmounted.

To these general points some more particular considerations should be added, which will enable us better to appreciate those of which we have just spoken. These particular considerations require:

1st That there be free communications between the different points of a position, so that the troops be enabled to move with facility in every direction, and to render each other assistance; were the ground covered with fences, or

intersected by ravines or streams, the communication between the different bodies of troops would be impossible; or again, were they to be separated by large intervals and obliged to make considerable detours, the enemy might succeed in forcing a point before it could possibly be supported; such objections alone are sufficient to make it desirable to select some other position.

2nd The position should have several easy modes of ingress and egress, and its front, flanks, and rear should be free and open by means of natural or artificial outlets, a position having in its rear marshes or streams, or in short, any other cramped ground, should be avoided, as in case of retreat, it would become a long and difficult operation to draw off the troops and artillery.

Officers who know how easily troops break their ranks when retiring under fire, will feel the danger of their being retarded or separated by difficulties of ground, more particularly when closely pursued; whereas, were they enabled to retire with facility, and, preserving their ranks, to reach advantageous and contiguous points without much loss, they might form anew on these points, and make head against the enemy.

Nevertheless, we may remark, that occasionally small bodies of troops may occupy positions without any communications, and behind which there may be deep ditches, ravines, or other obstacles, because it may be necessary to take possession of and retain those points; but in this case, to obviate the inconveniences which may arise from the occupation of such positions, they must be considered as isolated posts, and strong detachments must be placed in reserve to support the corps in front, to check the pursuit of the enemy, and enable the troops to rally, if repulsed; fixing, moreover, beforehand a point of rendezvous in the rear for each of these detachments.

3rd To ensure the advantage of ground, the position should not be commanded either from the front or flanks; for, should any high ground of superior or even equal

elevation to that of the position be within range of artillery, it would be untenable. It is a received principle that a position is good only when it commands the surrounding country, or, at all events, is not commanded by it.

4th In mountainous countries, the obstacles which cover a position, as well as the defiles leading to it, must always be under the fire of the guns on the front of the position; were the approaches out of the range of artillery, the enemy might easily pass them, and form inside without opposition.

Positions situated on heights sloping gradually downwards, unite the greatest number of advantages, and are to be preferred in every respect.

In plains, where positions have not the advantages of command, they are more or less important, according to the nature of the obstacles which cover them; but it is always essential that the ground immediately behind these obstacles should be clear, so that they may be defended by artillery placed within range, unless, indeed, the obstacles be sufficiently extensive to form long defiles, easily guarded or blocked up.

The obstacles most calculated to obstruct the advance of an enemy are, thick woods, through which the roads are few and narrow; large streams not fordable, and across which the construction of bridges would be a work of time; marshes, hollow roads, deep and scarped ravines; and, lastly, a country much intersected by hedges, ditches, canals, &c.

Nevertheless, a position should not be chosen too near woods or other cover, unless these can be occupied; for the enemy might be enabled, unexpectedly, to advance and surprise the position, whilst the attention of the defenders is directed to some other point, either by false attacks or other demonstrations.

Positions in such ground require much more vigilance in guarding against surprises, concealed movements, or manœuvres, calculated to turn a flank, than in a less broken

country; but at the same time it is more easy to find points of "appui" for the wings, and the difficulties of the assailant are increased, the nature of the ground diminishing his means of acting.

It should also be borne in mind, that such a position would be without any object were its front covered by impassable obstacles, such as a marsh or a rugged country, through which the troops occupying it could not themselves debouch.

In all positions the weakest points are the flanks, because the troops placed there being maintained only by their own fire, are unable to offer a vigorous resistance.

To remedy this inconvenience, the flanks should rest on points which, by their natural position, present obstacles through which the enemy will not be able to penetrate without great difficulty, such as towns, villages, streams, marshes, ravines, escarpments, and thick woods, which can neither be traversed nor turned; if these do not render the attack of the position impossible, they at least retard the progress of the assailant sufficiently to enable the reinforcements to come up before the flanks are forced, or before the movements necessary to effect a change of front or of position can be completed.

The want of points of "appui" on the flanks of a position may be remedied by placing in echelon behind the flanks one or more detachments to support the weak parts in such a manner as to enable them to overlap and afford each other mutual support: this is the best mode of preventing the enemy from forcing a flank which is without points of "appui."

In open and flat countries, where no positions can be found, small bodies of troops have difficulty in protecting themselves; as they are, however, sometimes obliged to traverse plains, the only mode by which they can obviate the disadvantages of ground is by remaining together in their temporary positions, and by making the best possible use of those accidents which all grounds present, such as hollow

roads, hillocks, and streams, taking care to strengthen the flanks, and always to have the front covered.

If, on the one hand, a large army is less restricted in its choice of positions, because its strength enables it to cover those points which it does not immediately occupy; on the other hand, a small body of troops being more moveable, can select and change its position with greater facility, and can take advantage of obstacles which would be useless to a more considerable body.

For instance, three battalions may take post on a ravine capable of arresting for some minutes the endeavours of the enemy, and this period will suffice for these battalions to change their positions, whilst with twenty battalions it is a different affair as far as regards the time requisite to effect the smallest change in their order of battle.

An obstacle which may chance to be behind the front of a position occupied by a corps of twenty battalions, may become inconvenient, should this corps be obliged to abandon the position, and to form column with a view of retiring; whereas, the same obstacle might prove of advantage to a smaller body which, on reaching it, might take up a position in rear and make it a point of "appui."

In the first case, this obstacle should be further off; and to be able to take advantage of the position behind it, the ground should be capable of containing the whole twenty battalions, and they should be able to reach it simultaneously in different columns and by different routes, all leading however straight to it; in the second case, three or four battalions may easily find, at a short distance, a new position, where they may arrest the advance of the enemy, and oblige him to make other dispositions.

These observations show that it is much more easy for a small body of troops to find a suitable position than for one more considerable.

Small bodies of troops are often made to occupy points which do not offer any natural positions susceptible of defence, but of which the occupation cannot be neglected on

account of the relation they bear to the position of the army. It is for the officers entrusted with the occupation of such posts to supply, by their skilful dispositions, what they may be deficient in, and to hold them only so long as they have to do with an enemy whose force is not too disproportioned to their own, so as not to expose themselves to a total defeat by a tardy retreat.

When circumstances render it necessary to occupy a defective position, the weak parts must be strengthened by artificial means, either by the proper distribution of the troops and the judicious employment of the three arms, or by manœuvres, which may prevent the enemy from availing himself of the inherent faults of the position.

Positions should always be chosen with regard to the object in view, and to the posts occupied by the enemy.

Should the object in taking up the position be an offensive enterprise, it is necessary to take into consideration which are the most important points to menace, and to gain possession of the outlets leading to them, being careful to reduce any obstacles which might prevent their being easily reached.

Such positions can only be taken up with superior forces, but we must not on that account neglect to secure the flanks, and to cover the front by obstacles which can be passed by the defenders only.

Offensive positions should be selected so that they may, 1st Menace several points at the same time; 2nd Afford the means of dislodging the enemy, of separating him from his posts, and from the communications which protect and facilitate his retreat; 3rd and lastly, may oblige the enemy, before he can quit his position, to make some movement which may give an opportunity of attacking him with advantage. But care must be taken that no opportunity be allowed to escape, and no risk should be run of forfeiting any advantage, either by occupying bad positions, or by neglecting those precautions prescribed for the safety of marches; for a corps attacking another on the line of march has always,

notwithstanding numerical inferiority, the advantage of the initiative; which may be improved by selecting the most suitable ground for the engagement.

Whenever a position is taken up with the intention of acting offensively, the posts should as much as possible be beyond any rivers or streams; in short, in front of all the defiles which would have to be passed in marching towards the enemy, so that he may be more easily reached, should he decide on a retrograde movement. Although occupying an offensive position, it is not the less necessary to have the flanks protected, the front covered, and the communications in rear guarded.

When the position taken up is defensive, it is important to examine well the points to be occupied and defended, and to place the posts so as to have to traverse only the chord of the arc which the enemy would have to describe in his offensive movement.

Every defensive position should include the "field of battle," as well as the troops; and may be considered good only when the enemy can neither pass nor turn it without exposing his flank and communications.

As we have already remarked, the rear should be clear, the flanks well protected, the front favorable, and commanding, if possible, the surrounding country, that is to say, all that is within range, so that the enemy may be unable to approach either it or the flanks without defiling, and engaging at a disadvantage under the fire of the troops occupying the commanding points.

These advantages of ground are obtained when the front and flanks are so covered as to leave only the smallest possible number of approaches, and when the obstacles on the flanks are sufficiently extensive to prevent the enemy from turning them without making a long circuit; should he throw a detachment on the rear of the position, a superior body should be sent to meet it, when this can be done without danger.

A defensive position should be reconnoitred and selected

with particular attention, not only as far as regards the details of the ground, but also in relation to the general nature and details of the surrounding country.

It is important to reconnoitre more particularly those obstacles on the front and flanks of a position which may prevent the enemy from reaching it ready formed for action, and may oblige him to advance through defiles where his numerical superiority cannot be brought into play.

Should the position be covered by streams, the bridges above and below must be destroyed, the fords must be rendered impassable, and inundations should be formed: these obstacles contribute much to augment the strength of a position; they arrest the advance of the enemy, and keep him under a deadly fire.

Should the ground not afford any of these natural impediments, redoubts, retrenchments, or abatis, must be substituted, or commanding batteries having a cross fire on the approaches; earthworks and guns, judiciously placed, add infinitely to the advantages of a defensive position, and render it often so strong, that the enemy, though superior in numbers, is as much afraid to attack it as to leave it behind him; this should always be borne in view in the choice of such positions.

The position should, moreover, command all the ground to the front and flanks, so that the fire of the infantry or of the artillery, may reach every point; the ground beyond the range of musquetry should be entirely clear, or else the position should have a sufficient command to give a plunging fire on the hedges, ditches, and ravines, in front and on the flanks.

It is no disadvantage to a defensive position to have a broken and well wooded country in its rear; such a country is favorable for retreat, provided the obstacles it presents be not insurmountable, and the ground offer a sufficient number of outlets to admit of the retreat being made with facility; but it is always dangerous to have streams or marshes in the rear, or any description of ground across which troops cannot retire without defiling.

In all cases, it is advisable to reconnoitre the direction and state of all the roads, and even of the lanes which cross the front, rear, and flanks of a defensive position. It is equally essential to be well acquainted with the name, strength, and distance of every neighbouring town and village, and to examine more attentively those, which, from their proximity to the front and flanks, it becomes the more necessary to occupy.

When the front and flanks of a position are covered by villages sufficiently near to be held, they must be occupied by detachments of infantry and artillery; but should the enemy, either in consequence of success obtained on some other point, or by any movement whatever, threaten to surround the troops placed there, they must be withdrawn.

The possibility of turning villages, and the nature of their defence, require that but a small number of infantry be placed in them; unless, indeed, it be considered of great importance to hold any particular village, which might, for instance, be the key of a position.

A knowledge of the local features of the ground with reference to the different troops is indispensable, in order to ensure skilful dispositions; for however well chosen or advantageous a position may be, its advantages are lost, should the troops occupying it be badly placed; that is to say, unless each arm be posted on that part of the ground best suited to it.

It is, therefore, the nature of the ground which decides the mode of placing each arm so as to enable it to render the most effective service, and to expose the enemy to the greatest loss, by augmenting his difficulties.

The infantry being suited to every description of ground, forms the main line of defence, it must be placed in as close order as possible in a line following the configuration of the position.

The artillery should be placed on those points whence it may produce the greatest effect, and may best command and flank the points presenting the most favorable chances to the attacking enemy.

The cavalry should be placed on ground which is quite clear, and sufficiently extensive to enable it, when leaving its position, in order to attack the enemy, to charge, so as to reach his ranks and break them. In rough ground, the cavalry should be divided into small detachments, placed behind the infantry, so as to be able to pass easily through the intervals at the favorable moment, and fall, unexpectedly, on the front and flanks of the advancing enemy.

Cavalry placed behind infantry should support it, if necessary; for should the front be inaccessible, or even difficult of approach, cavalry can effect nothing against the enemy's infantry, but would be exposed to great loss from his fire, when posted behind hedges or ravines.

In making dispositions for an attack in a plain, reserves of cavalry must be formed; and in a broken or dangerous country, the reserves should be composed of infantry and cavalry.

It is useless, and even dangerous, to post troops on ground which the enemy cannot approach, unless such a disposition were merely made as a ruse; but if not, troops should always be posted in other situations.

When a position is covered and flanked by rivers, streams, ravines, abatis, or by retrenchments of any description, the troops must be posted so, that while all the advantages presented by these lines of defence are ensured, they may not be so close as to be impeded in their movements.

Those parts in the profile of the ground where infantry, cavalry, or artillery may be concealed, should be observed; this may often be productive of great advantages, and may disconcert an assailant not prepared for this species of ambuscade.

It is important to be able to judge in the mode of disposing troops on any ground, of their effect in perspective, when viewed from the direction of the enemy. It is easy to perceive what advantage may be derived from these effects in a mountainous country, and even in undulating ground, by presenting to the adversary illusions instead of realities.

As a general rule, every disposition of troops should be viewed as a moveable fortification, and regulated by the principles of permanent fortifications; these principles prescribe, that as far as possible, a command should be secured, and that a position which is commanded, is to be avoided; that flanks as well as re-entering and salient angles are necessary; that the trace of the different parts of the work should be so arranged that these parts will afford reciprocal defence and protection, and yet cannot be turned or forced, but with great difficulty.

To effect these objects, the troops should always be so disposed that they may be able not only to act with freedom and to be of use everywhere, but that they may flank and support each other.

The troops charged with the defence of a position should be divided into three bodies; the strength of each depends on its duties.

The first body composed of troops placed in the position itself, in order to keep possession of it, should be the most numerous; the second, forming the reserve (which according to the nature of the ground should be composed of infantry and cavalry,) is placed in rear of the centre of the position, or in rear of those points which are the most important to maintain; or again, on those where it may best cover the retreat; lastly, the third body, of which the object is to observe the enemy and protect the position from surprises, should be proportioned in strength to the extent of the chain of out-posts and their supports, so as to cover the front, flanks, and rear of the position.

On the approach of the enemy, these posts fall back on the position, the cavalry passing through the line to join the reserve, while the infantry lines the nearest hedges and ditches in skirmishing order; but should there be none on the front or flanks, advantage must be taken of any irregularities of ground to arrest or retard the advance of the assailant, by a well sustained dropping fire, doing them all the injury possible. As the enemy advances, the skir-

mishers close inwards, and direct their fire on his lines or on the heads of his columns ; and lastly, should he advance with weak detachments without supports, or should he neglect to protect his flanks, the cavalry should seize the favorable moment to attack him on the point where he lays himself most open.

Should the enemy follow up his movement and approach within range of musquetry, then an effective and well sustained fire should be directed from the position against the point attacked ; and finally, should he approach still nearer, the troops posted on the point attacked, should advance with firmness and rapidity, and without breaking their ranks, charge him with the bayonet. In this case, a portion of the infantry of the reserve will follow up this attack and fill the vacancies which may have occurred on the front line of the position.

Should the enemy be repulsed, detachments of cavalry or infantry, according to the nature of the ground, will be sent in pursuit ; the troops engaged in the *mêlée*, should be quickly reformed and led back to the position, the preservation of which is the principal object, and that which should always be kept in view.

The reserve should not be engaged, except when its co-operation is indispensable in order to render the success decisive, or when it may have to support a body of troops, which placed in front, has been repulsed ; in this case, it may enable them to rally, and may replace them in the position ; in every other case, the reserve should be kept in hand to reinforce those points of the position which may require it, to support or cover the retreat ; or lastly, to enable any body that may have been repulsed, to retire in good order.

In the attack of a position, as in all other military operations, skilful dispositions, accompanied by judicious execution, can alone lead to a happy result ; and prudence enjoins not only to take every possible precaution to ensure the success of an operation, but also every measure calcula-

ted to obviate, in case of any unfortunate occurrence, the bad effects that might result.

On these principles, it is necessary always to be master of the line of retreat, and to direct the attack on a difficult point, rather than to sacrifice the communications, by advancing on ground presenting fewer obstacles.

The points of attack of a position are, 1st Those which constitute its real strength, and which together form the key of the position, they require much intrepidity on the part of the assailant, who should be well acquainted with their moral importance; the attack of these points decides more promptly and more completely, the carrying of a position, but they are also the most dangerous, and the operation should only be determined on, when, from circumstances, it is imperative to carry a position in the shortest possible time, and at any price; 2nd The points which must be seized in order to attack the enemy with advantage, are those which serve to flank the front of a position; as they may prove dangerous, should a retreat be necessary, it is indispensable to secure them as a precaution; 3rd and lastly, Those points which are the weakest, and which, owing to bad dispositions, have a flank open or unprotected; or again, points which are not protected by the fire of the position, and which may be approached unperceived.

Attacks directed on the extremity of a flank without "appui," are the most advantageous, more especially if the attack is made in one concentrated effort, and directed against one of the extremities of the line of a position, for this line will be rolled back as the attacking party advances, and then all the troops thus taken in flank, and deprived of the possibility of acting with effect, will inevitably be overthrown, without being able to offer any resistance. In such an attack, demonstrations must be made on all the other points of a position, in order to keep the defenders there at their posts.

But to render this attack decisive, and in order to sacrifice as few troops as possible, the movements to gain the

extremity of the line must be made without the knowledge of the enemy; for were this precaution neglected, he might reinforce that part, and frustrate the attack.

The advance must therefore be concealed, either by taking advantage of darkness, or of the ground, or by means of a false attack on the front, or one of the flanks of the position.

The two last mentioned modes are preferable, particularly when they can be employed simultaneously, because movements made at night, are less regular than those made in the day-time.

It is dangerous to attack both extremities at once, unless with a decidedly superior force; and again, it is useless to attack it in front, when it is possible, as we have just explained, to direct a concentrated effort on one of its extremities.

When small bodies of troops advance to the attack of a position, they should be led up to it in one column, or two at most, otherwise the isolated columns would not have sufficient consistence.

When a position is attacked, the advanced guard which precedes the column, should—1st Preserve such a distance as will admit of its being supported by the column in case of need; 2nd Drive in the advanced posts of the adversary; 3rd Take possession of, and cover all the ground which may be considered requisite for the deployment of the columns, as well as that which may ensure safety in retreat, should it be necessary, and those points more especially which are most calculated to check the pursuit of the enemy; 4th It should next form a chain of skirmishers, embracing in its fire the whole extent of the position; it should annoy and occupy the enemy, and by false attacks, engage his attention on those points where it is most desirable to deceive him.

During this, the commandant of the attacking force should approach under cover of the fire of the skirmishers, as near the position as possible, so as to be best able to form an opinion of its strong and weak points, and to

complete his dispositions, or else change the direction of the column, following the advanced guard.

Should the ground admit of a concentrated attack on one of the points of a position, the column should deploy in the following manner, and as near the enemy as possible, seeking to cover itself where it can from the effects of his fire.

One portion should form the first line of attack ; another, more numerous, the second line ; and in rear of this is placed the reserve.

Should the front of attack embrace a more considerable extent, the column is deployed in one line, and the reserve forms the second line.

When the columns deploy successively, and the ground during their advance towards the position, presents on the wings, points of "appui," such as marshes, streams, or ravines, they should not be neglected, if it is possible to secure them, while continuing the advance.

But should the ground be unfavorable, detachments of infantry or of cavalry, according to circumstances, must be placed in echelon, behind the wing which is deprived of natural supports, and should no obstacle exist, the advance must be made without loss of time, as soon as the deployment is completed.

Should the effect of a powerful artillery augment the difficulties of the ground, and render dangerous the approach to the position, then the artillery of the assailants must be placed on suitable points, and should, before the advance, open a vigorous fire, directed more particularly on those parts where the attack is to be made ; as soon as the enemy appears shaken, the advance must be conducted with equal intrepidity and celerity, preserving always as much order as possible.

In open ground, the advance against the enemy should be made in a compact body, and he should be attacked with the bayonet : in ground much intersected, or very uneven, a chain of skirmishers should precede the column

to drive in the enemy, who may be posted behind hedges, ditches, brushwood, and everything in front of the position; and they should afterwards direct their fire against the line, until the column shall have approached sufficiently near to act with effect.

The reserve should follow in rear of the centre, or of the wing destined to make the decisive attack; and in certain cases, may be made to join in the action, when it may serve, by a combined effort, to complete the success.

Should the attack have been successful, the victorious troops must be immediately reassembled and reformed, otherwise they would not be in a state to resist the attack of the enemy's reserve, which might advance against them in good order. The body which has secured the position, when reformed should advance, but with precaution, and should leave further pursuit to detachments of infantry or cavalry, according to the nature of the ground.

If the commander of the assailing party, after having renewed his attacks, and made every effort to carry the position, lose all hope of success, either on account of reinforcements having reached the enemy, or owing to unforeseen local obstacles, he should retire, rather than sacrifice his whole force in an attack which he does not expect to be successful.

As the different cases which may present themselves both in attack and defence should always be foreseen, and as dispositions should consequently have been made, and measures taken, to ensure the facility of the retreat, a force repulsed from the attack of a position should retire on the principles laid down for the retreat of a corps forced from its own position.

Thus, supposing the attack on a position to be unsuccessful, and retreat deemed indispensable, as soon as the order is given, the reserve must take up a position from whence it may cover the retreat of the other troops, and may enable them to unite in its rear, and post themselves as advantageously as possible.

The reserve must at any price maintain this position

until the retreating troops succeed in occupying it, when it may retire on some other point where it may equally cover the retreat, and again resist the enemy.

If the corps which retires is still pursued, the retreat should continue to be conducted in the same manner, until night puts an end to the pursuit, or until a position is gained capable of being maintained with advantage.

In a broken country the retreat should be made in several columns, covered by a chain of skirmishers, whilst in an open country, the infantry should be in masses covered by the cavalry.

10. *On Manœuvres, calculated to turn a Corps or a Position, and of the means of frustrating them.*

THE most easy, sure, and decisive manœuvre, is turning a corps or position. By it may be avoided the risks attending a direct attack on any principal point, where the defender has all the advantages arising from the occupation of a position, selecting his own ground, covering his front with obstacles natural or artificial, protecting his flanks, and finding for them points of "appui," difficult of access, throwing up batteries which subject the enemy to a cross fire as he approaches the position in column, and then debouches and deploys; while the attacking party, obstructed by broken-up roads, inundations, abatis, and retrenchments, and unable to use his artillery, is cannonaded by that of the defenders before he can get within musquetry range.

When it is desirable to obtain possession of a position protected and defended in this manner, it should be turned,

in order to avoid the loss of men, and also to oblige the troops occupying it to retire.

By turning a corps and attacking its flanks or rear with a sufficient force, a heavy blow may be dealt; but should the adversary have time and means to prevent the accomplishment of the manœuvre, it must be given up at once.

These means consist either in changing front or in a vigorous attack on the troops remaining in front of the position, weakened as they are by the detachment sent to turn it; but, to venture on such an attack, it must be well considered whether the affair can be decided before the enemy may have effected his object; if successful, then the detached corps must be immediately attacked, as its retreat may thus be endangered; if unsuccessful, there may be time to retire and abandon the position, more particularly when the movement of the enemy embraces a large extent of ground, which is generally the case; for to turn a corps a segment of a circle must be described, and the party who is menaced, remaining in the centre with his forces united, is superior to each of the separated parts of the assailing corps; he may, consequently, overwhelm them successively, or else, by quitting his position, he may always make head against that body by which he is most pressed. Generally speaking, it is not by corps detached to great distances, but by means of manœuvres on the field of battle that an adversary is effectually turned, confined to his position, or obliged to abandon it, and forced to fight until he yields.

Throwing out simple detachments on the flanks and rear of an enemy in order to make him uneasy about his communications, is the business of partisan corps, and of light troops, as their delays, or even their total loss, would not essentially effect the operations; and, moreover, they are, from their moveable character, well fitted for expeditions of this description.

In order to succeed in turning a corps or a position, the troops destined for the attack should be directed on the flanks, or on the prolonged direction of the line of retreat.

When such an attack succeeds, particularly when directed on a point presenting no resistance in itself, the most important results may be obtained; for the enemy being thus overthrown, is driven, from the route by which his retreat would have been safe.

But this mode of attack can only be adopted when the flanks of the adversary are weak and without points of "appui," or when his rear is not protected by a good and well reconnoitred position, occupied by a reserve.

A corps, or a position, may be turned with the whole body of troops destined for the attack, or with only a portion of them.

The first case is rare, unless when greatly superior to the enemy in numbers; for the positions which he must have taken up will necessarily be in front of the route to be pursued in order to reach him, which route would have to be re-traversed in case of a repulse; and it would be highly imprudent to move off without leaving a strong detachment, when about to undertake an attack in which want of success would infallibly expose the attacking party to be cut off from his communications.

The second case, more often practised, which consists in turning the enemy with part of a force, whilst occupying him in front with the remainder, and, at the same time, covering the route to be followed in case of retreat, demands many precautions; and this enterprise should only be carried into execution with superior forces.

For, as a certain time is requisite to execute the movements leading to the point to be turned, unless each portion of the divided corps is able to resist almost the whole of the enemy's united forces, the risk is incurred of his throwing himself on one of these portions, and crushing it, while the other is still distant from the point on which it is marching.

The only mode of avoiding this danger is by taking the shortest road to the real point of attack, so that all the troops may be constantly in communication, and conse-

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By turning a corps and attacking its flanks or rear with a sufficient force, a heavy blow may be dealt; but should the adversary have time and means to prevent the accomplishment of the manœuvre, it must be given up at once.

These means consist either in changing front or in a vigorous attack on the troops remaining in front of the position, weakened as they are by the detachment sent to turn it; but, to venture on such an attack, it must be well considered whether the affair can be decided before the enemy may have effected his object; if successful, then the detached corps must be immediately attacked, as its retreat may thus be endangered; if unsuccessful, there may be time to retire and abandon the position, more particularly when the movement of the enemy embraces a large extent of ground, which is generally the case; for to turn a corps a segment of a circle must be described, and the party who is menaced, remaining in the centre with his forces united, is superior to each of the separated parts of the assailing corps; he may, consequently, overwhelm them successively, or else, by quitting his position, he may always make head against that body by which he is most pressed. Generally speaking, it is not by corps detached to great distances, but by means of manœuvres on the field of battle that an adversary is effectually turned, confined to his position, or obliged to abandon it, and forced to fight until he yields.

Throwing out simple detachments on the flanks and rear of an enemy in order to make him uneasy about his communications, is the business of partisan corps, and of light troops, as their delays, or even their total loss, would not essentially effect the operations; and, moreover, they are, from their moveable character, well fitted for expeditions of this description.

In order to succeed in turning a corps or a position, the troops destined for the attack should be directed on the flanks, or on the prolonged direction of the line of retreat.

When such an attack succeeds, particularly when directed on a point presenting no resistance in itself, the most important results may be obtained; for the enemy being thus overthrown, is driven, from the route by which his retreat would have been safe.

But this mode of attack can only be adopted when the flanks of the adversary are weak and without points of "appui," or when his rear is not protected by a good and well reconnoitred position, occupied by a reserve.

A corps, or a position, may be turned with the whole body of troops destined for the attack, or with only a portion of them.

The first case is rare, unless when greatly superior to the enemy in numbers; for the positions which he must have taken up will necessarily be in front of the route to be pursued in order to reach him, which route would have to be re-traversed in case of a repulse; and it would be highly imprudent to move off without leaving a strong detachment, when about to undertake an attack in which want of success would infallibly expose the attacking party to be cut off from his communications.

The second case, more often practised, which consists in turning the enemy with part of a force, whilst occupying him in front with the remainder, and, at the same time, covering the route to be followed in case of retreat, demands many precautions; and this enterprise should only be carried into execution with superior forces.

For, as a certain time is requisite to execute the movements leading to the point to be turned, unless each portion of the divided corps is able to resist almost the whole of the enemy's united forces, the risk is incurred of his throwing himself on one of these portions, and crushing it, while the other is still distant from the point on which it is marching.

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quently able to afford each other mutual assistance ; or else, by having each division superior to the enemy's united forces.

In an open country it is difficult to turn a corps or a position, even when favored by darkness, because the dispositions and manœuvres of an assailant are easily perceived and frustrated.

A position is rarely successfully turned in a broken country with strongly marked features ; in such ground a position, though not occupied in force, obstructs the efforts of an assailant, and enables the defenders to send forward reinforcements to ensure its safety.

Mixed ground is that most adapted for movements tending to turn a position, more especially, when from its nature, the manœuvre may be concealed from the enemy, without being retarded in its execution by any obstacles.

When a position is to be turned, the front should first be threatened by demonstrations, and every possible means should be employed to withdraw the attention of the defenders from the real point on which the greater portion of the force is about to act ; should the enemy perceive the movement made to effect that object before it is terminated, then the demonstrations should be turned into real attacks, and the points of defence rapidly approached, while they are weakened by the absence of the troops sent to support the threatened flank or rear ; those points being skilfully selected which are most weakened, and present least resistance. But the party attacked may oppose to such an attempt the means proper to frustrate it ; these consist, 1st In the strength of the position itself ; and 2nd In the skilful dispositions of the troops defending it, and in the facility of moving them.

For instance, should the enemy direct the larger portion of his forces towards one of the flanks of the position, for the purpose of turning it, leaving only a weak detachment in front ; the defenders should first protect the menaced flank, either by re-inforcements of troops and artillery, or

by making a rapid change of front, and then fall, at the right moment, on the detachment left by the enemy in front of the position.

To secure a successful result in such an operation, the troops sent to turn the position must be allowed to gain a sufficient distance to render it certain that the party attacked may be driven back, and the original ground regained before the enemy's attack shall have taken place.

A quick and bold advance, (after which, some troops should be detached against the flank of the adversary,) always produces an advantageous result; but care must be taken not to give up the position, nor yet the route which secures the retreat.

If, after having lined the front and flanks of a position with the number of troops considered necessary for its defence, a disposable force remain, it should be sent to the wings in several detached bodies placed in echelon, so as to overlap and support each other. Thus, the enemy advancing to outflank the position, will be himself taken in flank by these detachments; and should he desire to turn them, he will be obliged to describe so large an arc, that being at a great distance from his communications, and from the troops left in front of the position, these last may be defeated before he can commence his attack.

Detached bodies placed in echelon, will always be beforehand with the enemy, whatever point he may attack, and will be better able than he to menace a flank; because, in their movements, they have only to follow the chord of the arc, which the assailant must describe.

The only danger of being out-flanked, is, when the enemy may be able to throw himself on an unprotected flank, before measures can be taken to present a new front capable of resistance; but, when the accidents of the ground give facilities for obstructing the advance of the assailant, and enable the defenders to take up new positions to a flank, then the out-flanking movements of the adversary may be paralysed by counter-mancœuvres, especially when

supported by the reserve, or by a re-inforcement brought up in the most advantageous direction.

From what has been said, may be deduced this axiom, that he who turns, is himself turned. It is the more important to be convinced of this truth, and not to be alarmed in critical moments by exaggerated fears of being cut off, as it often occurs, in secondary operations, and more particularly in affairs of detail, that detachments, isolated posts, and flanking columns, lose for the moment, their communications, or designedly abandon them in favor of some important operation.

These cases occur less frequently in grand military operations, because an army can hardly sacrifice its communications, unless they have been lost through very serious errors; and it can only hope to escape from so distressing a situation by the talent and personal courage of its chief, who is bound, by honor and duty, to try everything, sooner than pass under the "Caudine Forks."

When the number of troops is only just sufficient to defend the front of a position, and form the necessary reserve, the flanks cannot be strengthened by detachments in echellon.

This formation is, indeed, not absolutely necessary for a small body of troops, which usually occupies but a small extent of ground, for whatever manœuvres the enemy may make with the intention of turning either flank, the reserve especially, if it consists chiefly of cavalry, can always advance to meet him, and in a direction calculated to threaten, or even attack him on a flank, as quickly and easily as could troops placed beforehand in echellon, on the extremities of the line of defence.

In such cases the reserve should be careful to remain at its post, in order to be able to reach in good time, any point requiring its presence. It is for the officer charged with the defence of a position to show his abilities, by making a timely use of his reserve.

When troops acting on the defensive are no longer able to withstand the efforts of the enemy, or to oppose his

manœuvres, or when in acting offensively they cannot overcome his resistance, the reserve, which is in reality intended to supply any deficiency in numbers, must, at the decisive moment, be called up to attain the proposed object.

In every description of combat the troops first engaged are generally weakened, exhausted, and even disorganized, especially if the struggle has been long and deadly; and, in this case, victory almost always remains with him who has reserved the means of making a final effort.

It is for this reason that the reserve should never be engaged at the commencement of an action, when the task of the first combatants is not beyond their physical capabilities; neither should it remain inactive until the main body is totally destroyed, because the result proposed from calling into play the reserve, should be calculated on its co-operation with these very troops, and the support it may be able to afford them: had the reserve to bear alone the whole brunt of the action, it would infallibly share the fate of the other troops.

The reserves not immediately forming part of the line of battle should take up positions whence they may be able to throw themselves rapidly, and unimpeded by accidents of ground, wherever the urgency of circumstances may call them. If posted too far off, they would arrive too late to restore the equilibrium of the fight, in case of a reverse, or to complete the defeat, in case of success; the enemy being allowed time to take breath, would rally his troops and commence a new combat, where the chances would not be in favor of him who had no fresh troops to bring up.

It sometimes happens that reserves destined to support a position, are not placed close to it, either owing to particular circumstances, or the nature of the ground; but they should never be at a greater distance from the positions they are to take up in case of attack than the enemy is; unless, indeed, when the positions are sufficiently strong in themselves to be held, until their arrival. . If the

reserves could not possibly arrive before the combat were decided, it would be better to yield the ground, falling back on them, than to be exposed to defeat in detail.

It has been already remarked, that manœuvres, tending to turn a corps or a position, may be frustrated, by placing detached bodies of troops in echelon behind the wings as supports, or in default of them, by making use of the reserve with the same view as soon as the tendency of the movements of the enemy can be estimated. But if, from the nature of the ground, or the unpardonable negligence of the out-posts, these movements should not be discovered until the moment of attack, and should it be thought that the reserve could not arrive in time to prevent the troops from yielding the ground they have to defend, then endeavours must be made to gain as much time as possible, and to make the troops attacked in flank effect a rapid change of front.

If, on the ground occupied, there should be any point susceptible of a good defence, it should be defended without hesitation, at all hazards; but if not, then, after having effected the change of front, the enemy should be charged with the bayonet, notwithstanding his numerical superiority; this manœuvre gives time to the reserve to come up; and should the front of the position be but slightly menaced, or not at all, the part attacked should be supported by the greater portion of the corps, and it should advance, as much as possible, in the direction which will have the effect of taking the enemy in flank, and of driving him back.

It is a mistake, to suppose that the effect of a manœuvre, made with the intention of turning a flank, can be frustrated, by previously throwing back some of the troops "*en potence*;" this manœuvre is only of use in meeting a momentary danger, and should even then be employed only by small bodies of troops, and when the object is to gain time: the following are the reasons—the salient angle formed by the front and flanks is neither defended nor protected on any side; should the enemy succeed in breaking it, he will

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easily overthrow both, as they do not in any way support each other, and the troops cannot be moved without losing their connexion, and, consequently, without leaving an opening of which the enemy would not fail to profit.

The want of facility in moving, which is inherent in unskilful dispositions, gives the adversary the opportunity of turning, without danger, the flank of the troops forming the angle, and of defeating, with small numbers, superior forces, when unable to move freely in every direction.

When a position is threatened on several sides at once, the point occupied should be that towards which the different attacks converge. From this point the troops may advance successively towards the enemy's columns, and beat them in detail; but, as it has been already remarked, great celerity is necessary, and the moment should be so well chosen, that the combat with the first column may be terminated, and the line of retreat gained, in case of failure, before the other columns can reach and establish themselves on this line. It must be understood that the enemy's column which most endangers the line of retreat should be attacked first, unless the enemy so commit himself, that, by defeating one of the other columns, his communications may be interrupted, when he would be forced to retrace his steps.

An advantage gained over one column inevitably leads to the defeat of the other, and allows of more freedom in the subsequent manœuvres. The success of such an enterprise depends on the successive defeat of the enemy's detachments before they are sufficiently near to act in concert and support each other. Like every other defensive movement, it should be based—1st On the certainty of a safe retreat; 2nd On seizing the right moment for its execution, so as to be in time to frustrate the combinations of the adversary; 3rd On the assailant not going too far from the point serving as the pivot of his own movements, so as to be able to pass rapidly from one part to another; and 4th On striking with vigour, because the defeat of the

first column of the enemy must be completed before a second column can be attacked.

This chapter may be terminated with the following observations; admitting that a corps anxious to turn another corps is as strong as the latter, yet, when the forces of the former are divided, they will be inferior on any point they may threaten; whilst the corps in position keeping its troops united, may easily throw the larger portion of them in the point menaced, or, by a simple change of front, may present a line where the enemy thought only to find a flank. It is evident that he who is placed on the chord of the arc, which the enemy has to describe in order to turn him, will always be beforehand, having a shorter space to traverse.

These advantages are so great, that nothing but a very decided numerical superiority can counterbalance them.

11. *On Defiles.*

ANY portion of ground, which, owing to local impediments, can be passed only in column, or by a flank, forms a defile.

There are two sorts of defiles.

Some consist of a communication passing through the midst of impediments, and closed in on both sides, such as roads running through valleys, and routes lying between mountains; raised embankments passing through marshes or extensive inundations; roads enclosed by ditches or by impenetrable hedges, or passing through thick woods. Defiles of this description are often practicable for small detachments only, and are sometimes met with in the course of several marches in succession.

Other defiles consist of bridges, dikes traversing marshes, villages with narrow and cramped passages, which cannot be turned. Such defiles are generally short, and are accessible only at their extremities; they admit of no means of securing the flanks, either in crossing or following them; they confine the column to a limited space, but leave the lateral approaches open. Defiles of this description seldom fail to present themselves in all operations.

When defiles are narrow and in an open country, the fire directed from one end against the other is sometimes sufficient to dislodge the defenders; but in a broken country, or where the extent of a defile is considerable, this mode is useless.

The attack and defence of defiles devolve more especially on infantry and artillery. In the event, however, of a body of cavalry finding itself alone in front or rear of a defile, which ought to be guarded, or, of which the passage should be effected or disputed, the following are the modes which should be employed in the different cases.

In the two first cases, a portion of the cavalry should be dismounted, and in the last, the whole of the cavalry should remain in rear of the defile, out of musquetry range, so as to fall upon the enemy as he debouches, and prevent him from re-forming when he has passed through.

The mode of occupying defiles depends on their nature and configuration, as well as on the object in view, whilst the rules applicable to their attack or defence, are grounded, generally speaking, on the theory of positions, and its application to the different kinds of defiles.

The object for which a defile is occupied, determines the position of the troops. This may be either the maintenance of the defile for one's own use, or the interdiction of its passage to the adversary.

When troops hold a defile for their own use, they ought to take up in its front some advantageous position, which should not be too extensive, nor yet too far from the en-

trance, the wings being thrown back, and resting on the impassable obstacles forming the defile.

The advanced guard of this corps should come to the front of the defile, and should be so placed as to be within reach of support and protection from the position, whilst a reserve or strong detachment guards the entrance, as much to prevent the enemy from gaining possession of it, as to cover the retreat, in case of necessity, and thus give the main body time to form in its rear.

When the object is merely to prevent the enemy passing a defile, of which the occupation is of no importance, the most favorable point in its rear should be occupied by the main body, in order to be able to direct a deadly fire on the enemy, at the moment when he debouches, which will be the more severe, in proportion as the front shown is more extensive.

These rules are, however, subject to the following exceptions.

Should there be, for instance, in the defile itself, or on its flanks, any tenable posts, well calculated for its defence; should their occupation be of importance to cover and insure its passage; or again, should their nature be such, that the enemy, finding them unoccupied, might, by holding them, become master of the defile, then they should be taken possession of. When several defiles cross each other, and the adversary, by holding a central point, would be enabled to throw his forces without impediment upon several outlets, this point should be held, its occupation giving the advantage of united forces, which advantage would be lost by dividing them amongst the different passes to be guarded. It is difficult to force the entrance of a defile, the flanks of which are impracticable, when the length exceeds the range of artillery, and the defenders are thus out of reach of the fire of the attacking party. This difficulty results from the occupation by the defenders of a greater extent of ground than their opponents, who,

divided into columns of attack, can only debouch on a small front, and are crushed by the superior fire concentrated on them, before they are able to form and advance.

When a well defended defile is to be forced, and the artillery and infantry occupying it are covered by epaulments, a great loss may be anticipated; such an enterprise should only be undertaken when all other means are impossible, and when the advantage expected is so great as to outweigh that most important consideration.

The means employed in the defence of a defile indicate to the assailant those by which he must endeavour to weaken and overthrow them. These consist, first, in driving back the troops guarding the entrance, and then in covering the passage. To succeed in this object, the enemy must first be shaken by a superior fire, and, as soon as any hesitation is perceived in his ranks, he must be attacked in compact column with the bayonet.

The attack of a defile should be conducted in the following manner; 1st The troops should be halted at a distance, rather beyond gunshot; 2nd The infantry and artillery must be so placed as to be able to act with the greatest effect against the position, and more particularly against that portion of the troops which defends the entrance, seizing with address every advantage the ground may present; 3rd The slopes commanding the position of the enemy must be gained, and the infantry should be posted in several lines, but in such situations, as will enable them to give their fire, without interfering with each other; 4th The artillery must be so placed, as to be able to direct its fire on the front of the enemy, as well as to rake his flanks throughout their whole extent; 5th Several sections of skirmishers should be thrown out on the flanks of the defile; and, 6th The reserve should be sheltered from the fire of the position, but should be in a situation where it may stop the enemy, should he attempt to advance. If the defenders succeed in repulsing the lines of attack, these should be

re-formed in rear of the reserve, and perform its duties in their turn, in case the enemy follow up his advantage, and cause them to lose ground.

But should the enemy appear shaken, and his artillery be wholly or partly dismounted, then the infantry formed in a compact column, should enter the defile briskly, without firing, and should deploy as it debouches under cover of an advanced guard, taking care that the flanks are protected by some sections of skirmishers, and that the wings are covered by the obstacles of the defile itself, whilst the reserve following immediately in rear, remains in mass at the gorge of the defile, in order to hold it, or reinforce, if necessary, the centre or wings. Once masters of the defile, and of the obstacles flanking it, a portion of the reserve and all the cavalry pass through, and move on to the front.

The greater portion of the artillery which has also been left in rear, now advances to take up a position on the flanks of the defile, as soon as the infantry has effected its passage, and made good a portion of ground; when it should open a brisk fire upon the enemy, as long as he is within range.

But should the ground be unfavorable for an attack by main force, recourse must be had to measures which the assailant has always at his disposition; these consist: 1st In alarming the adversary by false demonstrations; 2nd In leading him into error, by threatening to turn him; and, 3rd By feigning to force a passage elsewhere. If, by any of these means, the extremity of the impediments forming the defile, should be regained, it must be instantly occupied by the first parties, who, by resting their flanks on it, will protect the advance of the column; then, as the latter penetrates, and the mass of the troops increases, all the outlets will be seized, and a larger space embraced, the points of "appui" for the wings, being always preserved.

Occupation and Defence of Defiles.

When the flanks of a defile, which it is of importance to occupy, are considered impracticable, but when the summits of the adjoining mountains are still accessible for light infantry, and the occupation of them is advisable, detachments must be placed there to prevent the enemy from seizing them.

These must be so placed as to occupy the culminating points, and those whence they may command the defile; the roads and paths parallel to it, and those leading to its flanks and rear; lastly, all those points whence they may command the sources of the communications in the mountains, more particularly those which, from their nature, may be advantageously defended and retained.

The main body posted at the entrance of the defile, and, therefore, with its flanks protected, should rest its wings on those points which are naturally the strongest, such as steep rocks, inaccessible mountains, and impassable ravines; in short, on those local features by which the enemy may be prevented from attacking the defile with success, or which will, at least, retard his progress, and will, above all, oblige him to secure the mountains on the flanks before he is able to penetrate the defile.

The communications between the detachments covering the flanks of a defile and the main body, should be so arranged, that they may fall back without impediment, and may also be reinforced and protected.

Should the nature or extent of the ground be such as to render difficult the communications of those detachments with the main body, or with each other, intermediate posts must be established, which should be sufficiently strong to afford assistance to those detachments in need of it, without weakening themselves to such a degree, as to be unable to defend their posts.

Should the detachments covering the flanks of the defile be forced, they should rally under cover of the supporting

posts, and immediately proceed to occupy other points, equally protecting the flanks, which points ought to be indicated beforehand.

A reserve should be advantageously posted at the points where the roads terminate or cross, and more particularly when the valleys radiate from there, as the enemy might otherwise pass unperceived, and cut off detachments posted at the foot of any of the spurs of the mountains.

Should one reserve be insufficient, it is better to furnish two, than to leave the detached posts without support, and to their own resources.

It is difficult to penetrate and force a defile, occupied in this manner, without having first mastered the heights which surround and command it.

The attack of defiles of this description should be conducted as follows :

Detachments of picked men should keep to the mountains, on the flanks of the advancing column, and attack vigorously the posts forming the chain, as well those serving as points of "appui" to the wings, as those placed in commanding positions, whence the others may be taken in flank and rear. These attacks should be made simultaneously, in order to prevent the enemy's posts from assisting each other.

The mode of conducting such an attack, and the strength of the parties, must be decided with reference to the nature of the ground, the strength of the enemy's posts, and of their reserves.

Two-thirds of the force composing those detachments should advance in skirmishing order, the rest remaining united, to support and rally them, in case of need.

Should the enemy be so well posted, that he cannot be easily reached, and it is thought, that he can only ultimately be driven from his posts by being harassed with repeated attacks, the detachment should then consist of a sufficient number of men to be able to renew the attack frequently, and with fresh troops.

Those detachments charged with the expulsion of the enemy's posts on the mountains, should be followed by reserves, so as to be supported by them in case of need, as well as to afford them the means of rallying, and making head against the enemy, in case of a reverse.

When an attack on a post has been successful, the reserve should immediately occupy it; and whilst the advanced posts pursue the enemy, and threaten the flanks and rear of the neighbouring posts, the reserve should follow with the whole, or a portion of its force, according to circumstances, to support these new attacks, which should be continued unceasingly until the enemy is driven from all the points he occupied, and until the heights flanking the defile are carried.

When a corps has to pass through a defile not occupied by the enemy, but in his neighbourhood, the same precaution should be used, as if it were to be forced; for an unexpected attack, when the defile had been entered, would place it in a most unfortunate predicament.

This is what should be done in such cases:—When the advanced guard is near the defile, it should send on a strong detachment to pass through, with all those precautions which prudence demands. Having reached the further end, one half of the detachment will deploy in skirmishing order, while the other half, divided into several picquets, will push forward in every direction, to ascertain whether the enemy is anywhere in the environs.

The first detachment should be followed by three others, taken equally from the advanced guard—one posts itself before the outlet of the defile to mask it; the two others take up positions on its flanks, so as by their fire, to protect, if necessary, the advanced guard when it debouches from the defile; when the flanks of the defile are accessible, sections of skirmishers should be sent there.

When the column has nearly reached the entrance of the defile, the remainder of the advanced guard should pass

through, and take up a position in front, in the same manner as that laid down for the passage of a defile by main force; the column will then follow, and deploy on the further side; the artillery, cavalry, and rear guard, follow next.

The passage of a defile in a retreat, in the neighbourhood of the enemy, is conducted in a similar manner, but in an inverse order.

The art of conducting a retreat through a defile is difficult, because the mass of troops presenting a front to the enemy, must be continually on the decrease, and a retreating column, whose extent of front is out-flanked by the enemy, can hardly arrest his progress.

In such a case, infantry should be posted in line at the entrance of the defile, with the wings resting on it. This line should be unbroken, the troops being at close files, or having natural obstacles of ground in their intervals, so that the enemy may nowhere find an opening by which to penetrate.

The entrance to the defiles being thus protected, the line breaks into column, either from the flanks or centre, as the ground or the enemy's movements may render necessary. The cavalry files away first, because it is useless here, not having under any circumstances a fair field, and when cramped in a defile, it cannot face about with facility; the artillery follows, and the infantry brings up the rear.

The first troops which debouch, form in front of the passage, within range, so as to enfilade it; and as the remainder pass through, they form up on their flanks.

Should there be any lateral approaches which cross the defile, or lead on its flanks, but too far from the position to be included in it, by which the retreat of the rear guard might be endangered, then it is desirable, that the column, as it approaches those points, should throw out some detachments, pushing them as far as may be necessary, to cover its retreat, and that of the rear guard. This last should defend the entrance of the defile, until the column is so far ad-

vanced as to be out of range of the enemy, and should then effect its own retreat on similar principles.

In broken ground, the retreat of the rear guard should be covered by a chain of skirmishers, while in open countries, as its march can only be safely conducted by maintaining order, and by showing a good front, it should be covered and protected by the fire of small parties, and should the rear guard be too closely pressed by the enemy, these parties should face about, and charge them with the bayonet.

When the advantages presented by the ground, and its local features, are made available, and the troops present a bold front, the pursuit of the enemy may be easily arrested, and he may be kept back till the last moment.

12. *On the Passage of Rivers.*

RIVERS are, generally speaking, in favor of the army acting on the defensive, while they obstruct the progress of that acting offensively, which is often forced to establish bridges, and finds its front restricted.

The passage of a river, by main force, is attended with great difficulties, because it is first necessary to construct bridges, or some floating apparatus, in order to render the crossing possible. In the passage of a defile, the impetus of a column, when the enemy has been shaken by a cannonade, is generally sufficient to force open the way; but in the case in point, the troops charged with the construction of a bridge, are unable to protect themselves, and keep in check the forces of the adversary, as a column in any other situation would do. They require then, additional support, to keep the enemy away from the point where the passage is to be effected, so that he may neither damage the boats nor incommode the pontonniers.

This task can be effected by the fire of artillery and musquetry, only in the very rare case, when the bed of the river is so narrow, and the ground beyond it so open and flat, that the infantry disputing the passage, can find no shelter, even for a part of their force.

This is why the attempt to throw a bridge across a river should never be made, until detachments have been sent to the opposite bank, to drive the enemy from the points nearest the landing place.

The numbers of the troops first sent over, should be calculated with reference, not only to the nature and amount of those they will have to fight, but also to the means and degree of resistance to be expected from the enemy, and to the number and description of boats disposable.

The chances of success will be proportioned to the numbers that can disembark at once.

Should the ground admit of a landing being effected, at or near the spot marked for one end of the bridge, the first boats may be followed by some pontoons attached together, by which means a larger number may be disembarked at the same time, and the construction of the bridge, thus commenced on both banks, will be completed much more speedily.

The troops should continue to pass over, while the works are going on, in order to augment the forces first engaged, and to accelerate the passage, a consideration of the highest importance, and which should never be lost sight of.

When the command of both banks has been gained, any unforeseen obstacles are more easily overcome, because the men on the opposite sides can assist each other.

Immediately after the first disembarkation, the bridge should be established, after which the columns may advance.

These three operations must be kept in view, in selecting the most suitable point for the passage, and it should be observed, that if the command of the opposite bank be the only advantage, it is not sufficient to determine the choice.

The banks should be equally adapted for the embarkation,

as the disembarkation; the ground should admit of the deployment of the columns; the strength of the current should not be such, as to endanger the safety of the bridge; and, lastly, there must be sufficient means of securing it, either in the bed of the river, or on the banks.

It is seldom that all these conditions are found; for which reason there are generally but few points well adapted for the construction of bridges.

A complicated and considerable operation, like the passage of a river, will seldom succeed, if the adversary, aware of the project, and of the point selected, prepares suitable dispositions of defence.

The difficulties attending the passage of a river, may, however, be overcome, either by feigned passages, which oblige the defending army to assemble its forces on the points threatened, whilst a rapid movement is made on other points, where there are but few troops or none; or else by posting artillery in commanding positions, whence, by a cross fire, the enemy may be driven from the opposite bank, and the construction of the bridge, as well as the passage of the troops, may be protected.

The first care in such an enterprise should be to conceal all the preparations, and to conduct the operation as a sort of surprise, profiting by the adversary's fancied security in the difficulty of the obstacles to be overcome, or engaging his attention, by making demonstrations on other points.

Rivers may be crossed on the ice, by fords, by swimming, by bridges, in boats, and, in short, on every description of floating body.

By an exact knowledge of the banks of a river, the army acting offensively, learns what places are susceptible of becoming points of passage, and that acting defensively, learns which points must be more particularly guarded; both should attentively study those most favourable on either side for the defence or passage of the river.

It is not until an accurate reconnaissance of a river has

been made, that the most favorable spot, and the best means to be employed in crossing, can be ascertained.

Before crossing a river, it must be observed whether the bank occupied commands that opposite, and if it admits of the establishment of batteries to keep the enemy at a distance, and cover the passage: also, whether the ground on the other side will contain a sufficient number of troops to make an advantageous resistance in the event of the attack being made before all the forces have crossed the river.

As rivers are sometimes bordered by woods, villages, country seats, or other places in their vicinity, which give great facilities for passing them, it is always essential to have a knowledge of these, whether active operations are about to be carried on, or quarters to be taken up.

In either case, the numbers and dimension of the boats or barges to be met with should be ascertained, in order to know how many men and horses might, in case of necessity, be sent over at once, and how many of these boats would be required in the construction of one or more bridges.

Rivers which, in their courses, form frequent bends, are more easily crossed, than those flowing in straight lines.

The bends of a river require more particular attention than any other parts of its course, because they are of use in planning a surprise, which is generally the best mode of effecting a passage; but it is necessary to be well acquainted with both banks.

The first thing to be examined is the position which the army ought to occupy while the bridges are in course of construction, ascertaining in how many columns this position can be reached; all the outlets from it to the approaches of the bridges ought to be perfectly practicable.

This shows the necessity of an accurate acquaintance with the nature of the ground on both banks, and especially on that occupied by the enemy: firstly, in order to reach the bridge without danger or confusion; and, secondly, in order to push on, as quickly as possible, to the

position determined on; this can be effected only when routes have been prepared beforehand, of the directions which the several columns must follow on both sides; and the utility of this precaution will be still more apparent, should it be necessary to follow the river banks.

The different positions should be reconnoitred which the ground may contain in a parallel direction, as well as at right angles to the banks of the river on either side; so that the roads leading to it must be known, as well as the heights, the hills, and their undulations, and their distances one from another.

Should the river be bordered by high or steep mountains, it is useful to know whether, on their slopes, or at their feet, there may be any unfrequented roads or paths used by the boatmen, of which advantage may be taken.

It is always dangerous to attempt a passage opposite a height, a wood, or a close country, when these are occupied, for the enemy might take post there, conceal his movements, and prevent the landing.

As a general rule, a command of fire from the opposite heights is to be avoided, whether the passage of the river is to be forced or prevented. If this inconvenience cannot be entirely avoided, the enterprise need not, on that account, be abandoned, but the troops should be kept at a greater distance, as well as the entrenchments, which should be thrown up in such a manner, as to be exposed to the smallest possible amount of injury from the enemy's fire.

Preparations for the passage of a river may be made beforehand, above the point selected for the bridge, particularly when any tributary stream gives a facility for so doing.

Such preparations are attended with the following advantages: 1st The actual spot determined on for the passage is concealed from the enemy; 2nd He is left in uncertainty with regard to the exact time of making the attempt, of which the inevitable noise attending the preparation of the beams, &c., would have given him notice;

3rd The actual construction of the bridge will be much facilitated—this is always a tedious operation, more especially when all the preparations must be made on the spot where the bridge is to be established.

A river may be considered capable of being well defended when the enemy cannot pass it with facility, either in front of the position occupied, nor yet below nor above it, and when he can still less turn it, by ascending to the source.

In reconnoitring a river, which is to serve as a line of defence, attention should be given to the best means of rendering useless any advantages the adversary may derive from the local features of the ground; the facilities he may have of effecting a passage should be examined, whether by existing bridges or by those he may construct, either at the bends, or in other rivers or navigable streams; or else by means of the boats he may be able to collect.

The advantages of the bank he occupies must be observed, as well as the nature of the country he would have to traverse, after having effected a passage.

The best means of guarding any river, which is to be kept as a line of defence, must be studied; the position to be taken up by an army in order to protect the greatest possible extent of its course, and to be able to reach promptly any particular point; also the facilities for charging the enemy before all his forces have passed over.

When the passage of a river will occupy a considerable time, the enemy cannot, on the day of the passage, move far from the bank; it should then be taken into consideration whether his position will be good or the reverse, and whether he may there be attacked with advantage.

The best modes of obstructing the passage of a river consist, in throwing up redoubts or simple batteries, at the re-entering bends, angles, or other points where the enemy might construct his bridges with facility; and keeping in good order the roads which the patrols between the dif-

ferent posts have to follow; these should be as near the bank as possible.

With respect to the posts of infantry, they should be established beyond the fire of the enemy's patrols, at about a hundred paces from the bank, in villages, woods, houses, behind hedges, or other places, whence they may best observe the course of the river and the opposite bank, but sentries should be placed only on that side which is occupied. If the bank is flat and bare, some cavalry picquets should be posted on the heights nearest the river, to support the infantry.

We will now point out what local objects deserve more particularly to be taken into consideration, with reference to a line of defence formed by a great river; these are :

1st Those villages on the banks, whence may be observed the movements of the army about to attempt the passage, and those amongst them from which signals may be made to other important points; in this case, the best signals to be employed by day and by night should be determined on.

2nd Those parts of the river most favorable for the passage, and the most efficacious means of opposing it.

3rd The sand banks, islands, different branches of the river, and local peculiarities of the bank occupied, and the modes by which they may best be turned to account in the defence.

4th The positions of the actual entrenchments, redoubts, and guard houses, or of those about to be established; noting whether any of the advantages of the former are affected by the changes which may have taken place on either bank.

5th The positions of the fortified posts and their armament.

6th The different descriptions of work required, and the amount of time which the necessary constructions would demand.

7th The woods covering those parts of the bank where the army may be; whether they are extensive, dense, or easy

of access; what outlets they may have on the banks of the river; if advantageous, or the reverse; and, in case of surprise, whether troops might not be promptly and advantageously retrenched there by means of abattis.

8th The bank occupied; observing whether it is protected by any marshy parts, and if so, their situation and extent.

9th The roads following the course of the river or leading to it; noting whether they are practicable for troops and artillery, and with what important points they communicate.

10th The harbours or creeks that the bank occupied may contain, which might give facilities for the construction of boats, &c.; and the resources which may be made available under that head.

11th The navigation of the river; noting whether it is interrupted during the floods; what causes produce them, and at what periods they occasion inundations; what is their duration and extent; and, lastly, what is in these cases the mean rise of the water, &c.

The direction of the course of a river, the nature of its bank and its local features, must be considered under every possible point of view, when acting either on the offensive or defensive, for the operations of a campaign may sometimes depend on the means used to effect the passage of a river, or to prevent it. This is why it is equally essential to have information respecting both banks of the rivers to be passed or guarded, and of the large streams which run into them, especially when they are navigable, and then more particularly from that point where they commence to be so.

In making the reconnaissance of a river, the following points must be also taken into consideration, and carefully observed.

1st The country where the river takes its rise, and those which it traverses from its source to its embouchure; the state to which it belongs; noting whether to a neutral power, to one favorably disposed, or the reverse,

2nd Whether the river is navigable, and to and from what points; whether it is possible to ascend the stream; if it

can furnish many, or but few boats; their size and description must be specified, as well as the nature of the navigation and commerce in which they are employed; what advantages may be derived from these boats; the number of infantry and cavalry they can hold, and their tonnage; also the time that would be requisite to assemble them all, at one or at different points; lastly, what they could carry, when the waters are low, and what, when high; whether there are towing paths fit for horses or for men; the places where these are interrupted by ditches, marshes, woods, &c.; towards which side the current runs; under which of the arches of the bridges the boats or rafts should pass; the width of these arches; whether the bottom of the river is sandy, and subject to changes, which might alter the course of the current.

3rd The width, rapidity, and depth of the river at different distances from the banks, when the waters are high as well as low, especially in those places where the passage is practicable: the nature of the bed of the river; whether it is muddy, hard, stony, sandy, or covered with gravel; the bends and windings it contains; if the waters are subject to periodical or accidental floods; if these may be caused by storms, or by sluices and flood gates; what extent of country they can inundate; how long the waters take to run down, and what is their effect.

4th Whether the river freezes wholly or partially, and at what period; if the ice will support horses, carriages, and artillery; by what means may all surprises be best avoided.

What is the usual period of the breaking up of the ice, and how are its dangers to be obviated.

5th The sand banks and islands of the river, their configuration; whether they are steep, inhabited, and cultivated, containing heights, woods, downs, or marshes; whether they could be occupied as positions; if they contain mills or sluices, these should be mentioned, and their uses carefully described.

6th The fords of the rivers, whether for infantry or cavalry; their nature, and any peculiar marks on the banks, by which they may be found; by what means they may be rendered useless; whether the river may become fordable by having a portion of its waters turned off, &c.

It may be observed that fords, to be fit for the passage of infantry, should not be more than three feet deep, and four feet for cavalry; the former, may, however, if absolutely necessary, cross over a ford four feet deep—but then the breadth should not be great.

The best mode of discovering the fords is by going down the river in a boat with a sounding line three or four feet long, according as it may be desired to find fords for cavalry or infantry; these will be shown by the motions of the line.

When a river rushes rapidly between two sand banks, it should be sounded across, as it is generally fordable in such cases.

Fords are often found where the bed of the river is widest—absence of rapidity in the current is often a sign of depth.

Should the river have increased or diminished in depth, it ought to be sounded anew, to make sure that its bed has not been hollowed out, and that the same fords still exist.

The best fords have a gravelly bottom; in mountainous countries they are often obstructed by large stones, which render them inconvenient for horses, and impracticable for carriages.

In countries abounding in sandy wastes, the bottom of the fords is generally of fine sand or gravel, which becomes loosened when a number of horses pass through it; the water carries this off, the ford becomes hollowed out, and the last horses have to swim, or get over with difficulty.

When troops have to cross a river, the direction of the ford should be pointed out by stakes, in two rows, showing its width and the actual position of the passage.

7th When there are bridges, their situations, uses, and communications must be observed; whether or not they are draw-bridges; whether of wood or stone, in good or bad condition; whether they should be destroyed or rebuilt, and how long these operations would take—the number of their piles, their dimensions and strength; what weight they are capable of supporting; whether they are strong enough for the passage of artillery, waggons, and cavalry, or of infantry alone; the nature of their approaches and outlets, and of the country beyond; whether the banks they unite are of equal height, and, if not, which has the command.

8th It must be observed whether it would be easy and useful to retrench any of the bridge heads; what advantages might be derived therefrom; whether the bridges could be attacked, if already in the enemy's possession, or defended, should he attempt to make himself master of them, or if it would be better, in the latter case, to abandon or destroy them.

9th Notes must be made of the description of bridges it would be possible to establish, such as bridges of boats, of trestles, of rafts, piles, pontoons, &c.; which of these would be the best and most easily constructed, with regard to circumstances, the nature of the ground, the width and the banks of the river, the quantity of boats, pontoons, trestles, beams, planks, &c., necessary for their construction.

10th It must be ascertained whether there are any known passages; what means there may be of constructing, not only bridges of boats, but of casks and beams, &c.; lastly, if there are any flying bridges or ferry boats on the river, and what use could be made of them to pass over waggons, guns and cavalry, or infantry only.

11th The nature and height of the banks of the river must be noted; their elevation above the water level; their sides; whether the slopes can be lessened; which side has the command; what facilities there are for approaching it; and which are the points where the passage could best be attempted by main force.

12th The posts on the banks of the river should be observed; the nature of the heights, undulations, woods, hedges, brushwood, cultivated lands, meadows, or marshes, in their neighbourhood; their distances from the banks; those places where works may be undertaken (either by means of sluice-gates, or by piercing the dykes) to make inundations capable of covering a position, or with any other object. It must also equally be taken into account whether these inundations can be turned off or allowed to run down, and whether, by damming back the water, the depth of the river can be affected, rendering it fordable, or the reverse: the means of effecting this should be pointed out.

13th It is also necessary to consider the fortified places on the river, the strength of their works, the nature and numbers of their garrisons, of their armaments and provisions; the unfortified towns and the villages, the resources they are capable of affording the army; the boats, wood, cordage, and other materials for bridges, which may be collected in a short time, on each point favorable for a passage; what wood there may be fit for the construction of rafts, whether it is floating, or in dépôts on the banks, or standing; the wind and water mills; the woodcutters or carpenters, the smiths, and the boatmen living on the banks; the mills and sluices, their object, and the use that may be made of them.

To render the reconnaissance of a river complete, those rivers and streams which it receives should also be examined, particularly when these last are navigable, and when the passage is to be attempted below their confluence; it is equally necessary to point out what may be accomplished by their means, to note the distance of the point of confluence from the places where the bridges would probably be constructed, as well as the roads and paths leading to those places.

The bridges which armies are obliged to construct, in order to pass the rivers which are frequently met with in

the direction of their lines of operation, should be placed, as much as possible, in those spots where they cannot be enfiladed by the enemy's artillery, and where the country opposite their outlets is open, so that these may not lead to marshes, ravines, or mountains.

When the bank opposite that on which the construction of a bridge is commenced is covered with woods, hedges, or bushes, and is commanded by the latter, with nothing to intercept the fire of artillery, it should not be considered a disadvantage, for these woods and hedges, lined by the infantry, who ought to occupy the side to which the passage is to be made, are in favor of the construction of the bridge.

But the ground on which the troops are to debouch should not be too much intersected with marshes and woods, and the wooded part should not extend too far beyond the bridge, or the passage would be difficult, as the enemy would be enabled to harass, and even to cut off the first troops sent over.

The point selected for the construction of a bridge should be at the re-entering bend of a river, observing to diminish, if possible, the steepness of the sides, or to make ramps; and should there be more than six feet from the water to the top of the bank, some other spot should be sought for.

The more the batteries on each side of the bend are placed in front of it, the greater the distance at which the enemy will be kept; but these batteries, must be so placed, as not to be exposed to be enfiladed by the enemy's guns.

Should the river contain no bends, that point of the bank should be chosen which has the greatest command of the opposite side; and if both banks are of equal height, that part should be preferred where the opposite bank is most open, and exposed to the fire of artillery.

When the embouchure of any river or large stream is on the bank occupied, and above the point selected for the construction of a bridge, advantage should be taken thereof

to launch the boats, several of which may be attached together, and the beams laid across them; by this means it becomes easy to float these different parts of the bridge to their proper places; when they have only to be fastened together and moored.

We may observe, that bridges should not be constructed close below the confluence of tributary streams, when these run through the enemy's country, as he might float down heavy bodies in order to break them, and this would be the more easily accomplished, in proportion to the strength of the current.

The most favorable time for the passage of rivers by main force, is, at day-break, because all the preparations may be made during the night, without the enemy's knowledge; and again, because a whole day is then available to secure possession of the opposite bank.

When troops have to pass a river in boats, too many men should not be allowed to enter each boat, so that the pontonniers placed in the bows and stern, may have room to manage their oars and the helm.

The embarkation should be conducted with the utmost order. The first soldiers who embark should sit down on the gunnel, or lean against the sides of the boat, should the gunnel be too high; the remainder will stand. If the water is shallow near the bank, the boats should be kept off a little, and the men may, if necessary, make a few steps in the water, to reach them.

The most perfect silence should be preserved, and the men must be warned not to rush to the side opposite that to which the boat inclines, in case of running foul of anything.

Except in cases of absolute necessity, the troops should never fire until disembarked.

The construction of a bridge should never be commenced until possession is gained of the opposite bank, or the enemy is driven from it.

It is advisable to throw several bridges at once across a

river, and at some little distance from each other, so that the passage may be the more quickly effected, and no danger incurred of the communication being interrupted by the enemy, when the army or one of its divisions only has passed over.

In this chapter has been shown, what is most worthy of being taken into consideration by officers charged with the reconnaissance of a river, either with the view of defending the passage, or of offensive operations; the mode of conducting the passage of a river by main force, has also been shown, as well as the most favourable points for effecting it, and those which present the best chances of success.

It should, however, be observed, that in operations of this nature, as the circumstances admit of an infinite variety, and may consequently give rise to a vast number of different combinations, it is impossible to lay down positive rules for their execution, which shall be applicable in all cases.

What may be suited to one river in a certain season, may be quite impossible elsewhere, or at another time of year:—In one place everything necessary may be conveyed by water; in another, the transport must be effected by land, and even by men: one river has marshy banks, a muddy bottom, and ordinary current; another, a rapid and torrent-like stream, the banks lined with thick woods, and an uneven bottom, covered with rocks and banks of gravel: in short, as nothing can be more varied than these accidents of nature which render the preparations for such enterprises liable to constant change and modification, it is only by an attentive study of detailed accounts of operations of this description, that officers can find fit subjects for meditation, by which they may be guided, and have their "*coup d'œil*" improved.

The advantages to be derived from accounts of these operations, are not confined to those officers, who, from their position, may be called on to direct similar ones; there is no soldier who may not find in them, useful examples and suggestions on which he may reflect with profit.

13. *On False Attacks and Demonstrations.*

DEMONSTRATIONS and false attacks are made for the purpose of deceiving the enemy, and of inducing him to take false steps—when skilfully executed, they contribute essentially to the success of military operations.

By demonstrations, are meant those movements and preparations, of which the object is, to lead the enemy into error with respect to the operations to be undertaken; the same is meant by false attacks, with this exception, that these are always attended with an engagement more or less serious.

Demonstrations are as varied as the objects which lead to their employment.

Those of which the object is to deceive the enemy, with regard to the plan of operations of the campaign, are more particularly based, 1st On the distribution of the army in its quarters or cantonments; 2nd On the movements made by the troops; 3rd On the establishment of the magazines; 4th On the state of the roads; 5th On the positions occupied and fortified, &c., &c.

Demonstrations of minor importance may be made with simple detachments, or with small bodies of troops, their object is generally, 1st To threaten the enemy on a particular point, in order to induce him to support it, and thus make him disseminate his forces; 2nd To deceive him as to the point of the real attack, reaching it either by means of rapid manœuvres, or by taking advantage of the ground to conceal the movements, whilst feigned attacks are employed to keep the greater portion of the enemy's forces at a distance from the decisive point, &c.

Demonstrations of enterprises, which may be considered impossible, should never be made.

For instance, if it is intended to cross a river at a point selected for that purpose, and it is wished to keep the enemy at a distance, the demonstrations or false attacks made with that view, should be directed on points, which would be considered both in strategy and tactics, as suitable for the passage; were they not so, the enemy would not be deceived, and disregarding the demonstrations and false attacks, would remain at his post.

In order to derive every possible advantage from demonstrations, the necessary movements and preparations should be made with every precaution, so as to give them the appearance of a serious enterprise.

The troops employed should be left in ignorance of their destination, or they might act with a want of energy, which would alone suffice to give the enemy an idea of their real object.

It is desirable to be well acquainted with the character of the officer commanding the enemy's troops; for one officer may be led into a snare by concealing the real intention, whilst another may be easily deceived by openly taking measures for the execution of an enterprise, more especially when, after having been several times taken in, he is induced to look upon these measures as merely "*ruses de guerre*."

What has been said about demonstrations, applies equally to false attacks; but, it is useless to employ these last against positions so strong that the enemy does not fear to leave them to themselves, or against points of which the loss would be unimportant.

Whenever a false attack is undertaken, with the view of withdrawing the adversary's forces from the decisive point, it must precede the true one, and should be directed against a point sufficiently distant, to prevent the troops sent there from countermarching, and returning to the assistance of those defending the point really attacked.

The interval of time, and the distance to be observed between the false and real attack, must be determined with

regard to the numerical force of the enemy, the description of troops at his disposal, the nature of the ground, and the amount of resistance he is considered capable of making.

False attacks are often made with the view of making offensive or retrograde movements, or of concealing the strength or weakness of one's own forces; whatever may be the motive, they should always be made with a sufficient number of troops, and with every appearance of an enterprise seriously undertaken.

Although the troops employed in false attacks, should be left in ignorance as to the object of their movements, it is not so with the officer commanding them, because he should take his measures in such a manner as to expose to the efforts of the enemy, no more men than may be indispensably necessary, except in very particular cases, and his reserve should be the strongest part, so that he may be able to direct the combat, keeping it up, or putting an end to it, as he may consider most desirable.

When, by demonstrations, the same result may be attained as by false attacks, the former are to be preferred, so as not to expose the men more than necessary.

Should it happen that an officer, entrusted with the command in a false attack, gains possession of a point it was only intended to menace, he must at once refer to the officer commanding the whole, who should alone decide whether or not it may be held with advantage.

In order to frustrate the demonstrations and false attacks of the enemy, all those operations, which it is in his power to attempt, and those which would be most advantageous to him, should be taken into consideration; he will either be guided by correct principles, or he will deviate from them.

In either case prudence enjoins us, 1st Never to abandon the strategical points of the position, nor to weaken ourselves there with the view of meeting the enemy on other points of less importance, even were he to direct a portion

of his forces on the latter; 2nd Not to resolve on any step without having first obtained certain information respecting the direction and the strength of the enemy, even at a sacrifice of time, for this may easily be made good, and at all events, would be less dangerous than the abandonment of an important position.

The officers who are entrusted with the direction of demonstrations and false attacks, often find occasions which call forth all their abilities, and enable them to contribute effectually to the success of the principal operations.

14. *On Corps of Observation, & on Investing & Blockading Corps.*

THE conquest of a fortress requires, as a necessary condition, that the enemy be unable to afford it assistance from any quarter. The investment should be complete, so as to render it impossible for the smallest detachments to penetrate, as they would retard the fall of the place, either by introducing provisions and ammunitions of war, or by facilitating the means of procuring them by sorties.

In order to fulfil this indispensable condition, when a fortified place is to be reduced, it should first be surrounded by a line of troops, facing inwards, whilst another, an outer line, facing the other way, watches the approaches from the surrounding country. But, as by this means, the forces would be too scattered, and the power of repulsing the enemy at any point where he might try to penetrate, would be lost, the exterior circle should be occupied by a chain of posts only, the corps of observation holding a central position, ready to move whenever it may be required.

Should the place be situated on a river, this precaution becomes the more necessary, because the basins of rivers

are generally flanked by heights parallel to their course, and often close to them; so that the troops would otherwise be scattered over the broken declivities of the mountain; and again, the communications would be subject to so many delays, that it would be impossible for the different posts to afford each other assistance. The safety of the corps of observation might there be compromised, were a single post forced.

These maxims are more easily followed when the direction of the operations, the local features, or other circumstances, indicate the lines on which alone the enemy can advance; or again, when the place is situated on the banks of a river, because it is then sufficient to observe the side on which the enemy may be, and to watch, at most, one half of the circumference.

The development of the exterior circle, and the distance to which the corps of observation should go, depend on the object in view, and on the general principle, that every enterprise should be founded on the security of the retreat, and of the base of operation; from these considerations, it may also be deduced, whether a siege should be undertaken, or if the operations should be limited to a blockade.

Should a simple investment be decided on, and the main object be to prevent the entrance of convoys, it is only necessary to calculate the time required to retire without danger, in case the corps covering the blockade should be beaten, or should wish to avoid a combat. But to protect a siege regularly, the posts should be more extended, and a larger space be kept between the place and the enemy, because it requires more time to save the "materiel" of a siege, and the inferiority of the disposable forces destined to act against the enemy, may be compensated for by the distance at which he is kept.

It is different when an army encounters on its line of operations fortified towns of the enemy, which it is not thought fit to besiege. These should either be observed to

prevent their garrisons from annoying the communications, or should be blockaded, so as to confine them to their own stores of provisions, and thus hasten their reduction.

From this simple explanation, it may be seen that the principal object of a corps of observation, is to oppose any enterprise that a garrison might attempt, either alone, or in concert with others in its vicinity, or with the inhabitants of the country invaded; whilst the object of a blockading corps is to force a garrison, abandoned to itself, to depend on its own resources.

A corps charged with the blockade of a place, should be numerically stronger than one charged to observe it, although the officer commanding the latter, should not confine himself to a mere observation of the garrison, but should also make use of every means in his power, to restrict it to the narrowest possible limits, and should take particular care that the reinforcements, munitions of war, and provisions sent to the place, are not allowed to reach it, thus restricting the garrison to its own resources; and should the artillery at his disposition admit of it, the place should be bombarded.

The strength and composition of a blockading corps, or of a corps of observation, are determined, 1st By the consideration of the strength and composition of the forces in the garrison; 2nd By the development of the fortifications of the places, by the nature of the ground on which these places are situated, and by which they are surrounded.

As in many other cases, we can here give only general principles; for each new circumstance requires such changes and modifications, that the strength and composition of blockading and observing corps cannot be decided on, until the country and ground on which they are to act have been reconnoitred, and until the composition, strength and situations of the garrisons, have been approximately ascertained.

When fortified places are situated on considerable

heights, and are surrounded with high mountains, their garrisons being generally very weak, it is better to blockade than merely to observe them; but, when they are situated on flat ground, and in an open country, without obstructions, it is more advisable to observe them.

Generally speaking, two-thirds of a corps, which has to observe a place situated in a plain, should consist of cavalry, the remainder being infantry, the whole strength being one-third more than that of the garrison; if, on the other hand, the ground in the environs of the place be much broken, two-thirds of the corps of observation should consist of infantry, and the remainder of cavalry, the whole being half as strong again as the garrison.

A corps charged with the blockade of a place, should consist entirely of infantry, and should equal the garrison in numbers.

The officers entrusted with the command of a corps of observation, should commence by acquiring a perfect knowledge of the nature of the ground, on which the places they are to observe, are situated; and these corps being left to themselves, and at a distance from the main body, should take the greatest precautions for their safety, and choose such positions as may enable them to effect their retreat, should it be necessary, without committing themselves.

Detachments, composed principally of cavalry, should be sent from the position taken up by the corps of observation, to take post at given points about the place, so as to be able to oppose a vigorous resistance to the troops of the garrison, on whatever side they may make their sorties.

Each of these cavalry detachments should be at least equal in strength to the cavalry of the garrison, and they should be so disposed, as to be able to unite promptly and with facility, in order to form a body capable of arresting the enemy sufficiently long, to allow of the main body coming to their support, in case of their being hard pressed.

The main body, as well as the detachments, should have posts not only on the side towards the place, but on every point by which the enemy might reach them, so as to be prepared for every enterprise that the garrison, as well as the troops outside, might attempt.

During the day, the posts established by the detachments for their security, should be distant about a cannon shot from the place, whilst during the night they may approach to within musquet shot.

The sorties undertaken by a garrison against the posts of a corps of observation, have usually the following objects more particularly in view, 1st To receive or give intelligence, especially when these posts are so numerous and vigilant, that there is no mode of attaining that object but by driving them back; 2nd To procure the provisions and resources to be found in the environs; 3rd To effect a junction with the inhabitants of the country, or with some other garrison, or with a body of troops sent expressly to execute some enterprise in the open country; 4th To second any efforts that may be made to raise the siege, or to supply the garrison with provisions, stores, or reinforcements.

A garrison should never make sorties merely with the view of driving back the posts of a corps of observation, for these do not immediately annoy it, and even if driven back, would soon re-occupy the same ground, so that the garrison would be uselessly subjected to fatigue and loss of men.

From whatever motive the garrison may attempt a sortie, the corps of observation should never engage seriously on ground commanded by the fire of the place.

The intention of the enemy may be easily guessed from the manner in which the sortie is conducted.

If, for instance, a weak detachment sallies from a garrison, and contents itself with forcing a passage through the surrounding posts, it may be presumed that the object in view, is merely to give and receive intelligence. Such

an object may be easily frustrated by means of detached parties constantly patrolling round the place.

Should the detachment sallying forth be stronger, and take with them beasts of burden, and means of carriage, it is evidently their intention to collect provisions; the best thing the corps of observation can do to render useless sorties of this nature is, to destroy or carry away everything within a league of the place, which might be of use to the garrison.

If the troops employed in the sortie are numerous; if they are accompanied with artillery, or much baggage, with waggons, &c., it is a proof that they intend abandoning the place entirely, either with the view of joining some other garrison, or of uniting with the inhabitants of the country to attempt some enterprise in the open plain.

In this last case, the officer commanding the corps of observation, should at once assemble his whole force, pursue the troops which have left the place, and attack them vigorously, as soon as he considers that they are too far to receive assistance, taking care to prevent their returning; in short, he should endeavour to destroy them altogether, or to take them prisoners, for, were he merely to disperse them, they might nevertheless execute their project, especially if the officer commanding them were commissioned to excite the peasantry to take up arms, and to put himself at their head.

Should the corps of observation be too weak to venture an attack, with any prospect of success, upon the troops making the sortie; or should the ground be unfavorable, its commander must endeavour to retard the march of the enemy by destroying the bridges and roads, by making demonstrations of attacking him, and by every other means in his power; and should follow him until the real object of the sortie is ascertained, even though he may be unable to frustrate it.

Whenever an officer commanding a corps of observation, learns that a hostile force is approaching the place, and re-

marks at the same time that the garrison is making preparations which shew that they purpose attempting a sortie, he should advance to meet the enemy, and attack him without hesitation. Should this body be superior to his, he must immediately retire to avoid being attacked simultaneously by the garrison.

When a corps is charged with the observation of two places, at short distances from each other, the commander takes post between them, and should their garrisons, with the design of uniting, execute sorties at the same time, he should march against the nearest first, and endeavour to beat it before the other can arrive to take part in the combat. So much for corps of observation; now for blockading corps.

Blockading corps, the object of which has been already explained, should invest a place as closely as possible, and no part whatever of their forces should be suffered to leave it, lest the garrison, taking advantage of their absence, should introduce supplies.

The officer commanding a blockading corps, should throw up redoubts on the points best calculated for repulsing the sorties that may be made by the garrison; these redoubts, supported by strong detachments, should not be too large, because their defence would require too many men, but they should be well constructed, and mounted with heavy guns, so as to be able to resist an attack until the arrival of the supports; moreover, they should not be exposed to the fire of the artillery of the place, which would soon destroy them, and annoy the troops charged with their occupation and defence.

In order more completely to hem in the garrison, and annoy it up to the covered way, ditches may be dug in the night, in front of the redoubt, when the nature of the ground admits of so doing, these should be occupied by sharp shooters selected from the best marksmen.

To the blockade should be added a bombardment when the stores are not kept in casemates, and when the place

is extensive and rich; the dread of its ruin may induce the inhabitants to decide on surrendering it.

The commander of the blockading corps determines the points for the construction of the batteries, from his knowledge of the interior of the place, and of the measures taken by the defenders; the batteries should be sunk, so as to be less exposed to the fire of the artillery of the place, and should be completed in one night.

In order to produce the greatest possible result from these batteries, their artillery should all fire in the same direction, otherwise they would, by a diverging fire, produce but little effect, especially when acting against an extensive place.

Advantage should be taken of the night to bombard a place, as well as to relieve the posts and change the artillery.

The blockade of a place is generally undertaken only when the army is able to support the corps charged with the operation. There are, however, circumstances when this corps is left to its own resources, and should make head against the enemy if he advances, whether with the intention of raising the blockade of the place, or of throwing in supplies.

In such a position, should the commander of the blockade consider himself able to engage the enemy with advantage, he should advance to meet him, without, however, going too far from the place, being careful to leave detachments to defend the entrenchments, as well as a strong reserve to support them, and assist in driving back any sorties that the garrison might attempt.

But, should the numerical forces of the approaching enemy be such, that the commander of the blockading corps would be obliged to oppose him with his entire force, his best mode of proceeding would be to collect his troops without any delay, and retire from the place, in order to prevent the garrison from taking any part in the combat, even were he convinced that the latter would not

fail to take advantage of the blockade being raised to destroy the works, and re-victual the place.

Such are the general principles by which officers, entrusted with the charge of corps of observation and of blockading corps, should regulate their proceedings.

When a place is to be besieged, the investment must first be made.

The cavalry is charged with this operation.

For this purpose it precedes the army, and quickly surrounds the place of which the siege is resolved on, so as to cut all the communications, and intercept the convoys, which the enemy always attempts to introduce at the last moment. The army then comes up with the heavy artillery; the enemy's posts in the advanced works are driven in; and at nightfall, the opening of the trenches is commenced, &c.; but it does not enter into the plan of this work, nor is it within its limits to treat of operations of this description.

15. *On Convoys.*

IN the escort and defence of convoys, much care and many precautions are requisite; the difficulties of their safe conduct, increase in proportion to the number of carriages of which they are composed, and to the length of their march. The safety of the convoys is of such immediate importance to the army, and merits so particularly the attention of the general who orders it, that every officer entrusted with the charge of a convoy, should receive instructions from him personally. In this chapter, will be laid down rules for the guidance of officers in charge of convoys, as well with regard to the details, as to the ensemble of these operations.

In conducting convoys, the main subjects for considera-

tion are, 1st The distance between the starting point and destination; 2nd The dangers they may incur from encountering hostile parties; 3rd The nature of the country they have to traverse; 4th The loads on the carriages, which may consist of money, military stores, or of provisions for extraordinary or daily use; 5th The number of carriages composing the convoy; 6th The proximity or distance of the enemy's army, and of the places occupied by him. From all these considerations, may be determined the description of troops, and the numerical force of which the escort of a convoy should consist.

The commanders of the posts, between the depôts and the army, should constantly have small parties in the field, as much for the purpose of ensuring the communications, as of letting the enemy know that measures are taken to prevent all surprises.

If there be any apprehension of a convoy being attacked on the march, the commander of the place whence it starts, as well as the general commanding the army, should send out detachments to guard the defiles, by which the enemy might debouch, and those by which the convoy has to pass; taking care to inform the officer commanding the convoy of these dispositions, so that in case of attack, he may unite the above detachments to the troops composing the escort, and be thus better able to oppose the attempts of the enemy.

If the convoy be of such importance that its loss might affect the remainder of the campaign, not only should a more numerous escort be provided, but detachments should be sent out, which, without attacking the enemy, even if they fall in with him, should march between him and the road traversed by the convoy, so as to frustrate any projects he may have formed.

This axiom, that in all military operations, the attack, defence, and retreat should be always provided for beforehand, applies specially to the conduct of convoys. Before making any dispositions, the nature of the ground to be

traversed by the convoy, should be considered, as well as the nature of the convoy itself, and of the strength and composition of the escort; these considerations require more ability and more combinations than may generally be thought necessary.

Every officer commanding the escort of a convoy should know before starting, 1st The number of carriages, and beasts of burden, of which the convoy is composed; 2nd The nature of the loads on the carriages, and how the different articles are distributed; 3rd The distance between the starting place of the convoy and its destination; 4th The nature of the roads it will have to follow; 5th The number and description of troops under his orders; 6th The position and strength of the enemy.

A knowledge of the different articles of which the convoy consists, and of their distribution on the different carriages is necessary, with a view to watching more particularly over the safety of those which are most valuable, of those which may be inflammable, or again, of those which are most liable to deterioration.

The distance to be traversed by the convoy, should be known in order to be able to hasten or retard the march, according to circumstances.

The width and nature of the roads must be ascertained, so as to regulate the order in which the convoy should be made to march, as well as to know the time it will take to reach its destination; the officer commanding, should know the places most calculated for ambuscades, and those where open attacks are most to be feared; and lastly, the points presenting the most secure retreat, and the direction from which assistance may be most naturally expected.

Whether the enemy be near or at a distance, the convoy should be conducted with proper precautions: nevertheless, when the proximity of the enemy gives occasion to fear an attack, they should be redoubled.

When the escort of a convoy has been assembled, the commander after having inspected it, should divide it into

five parts, viz :—the scouts of the advanced guard, the advanced guard, the main body, the flankers, and, lastly, the rear guard, which should itself have a rear guard.

The main body should be subdivided into four parts, of which the first forms the reserve ; the second, the detachment of the centre ; the third should be at the head of the convoy ; and the fourth, immediately in its rear.

These subdivisions should be in the following proportions ; the reserve equal to half the main body ; the detachment of the centre a fourth ; those in the front and rear an eighth each.

The two last named detachments should be of equal strength when there is equal danger of an attack in front and rear, when one is more to be feared than the other, they may be of unequal strength, but the difference should not be great.

The reserve should be so organized that the detachments of the centre, and of the front and rear, should never be obliged to quit their posts, nor to leave any part of the convoy exposed without defence to the attack of the enemy ; and the strength of the reserve, should be half that of the main body, so that it may be able to make head against the enemy, and give time to the convoy to file off and gain a place of safety, or to take up some defensible position.

The detachment of the centre should be double the strength of those at the extremities, because the centre of a convoy is the part against which, attacks are generally directed.

The strength laid down for the detachments at either extremity is sufficient, because they can be supported by the advanced or rear guard, and covered by the reserve.

The officer commanding the escort of a convoy, having charge of the ensemble of the operation, ought not to have any particular command ; but if obliged, from the scarcity of officers, to take one, it should be the reserve ; in this case, he should have with him a trustworthy and intelli-

gent officer, to whom, as well as to the officer in command of the detachment of the centre, he will explain the object of the operation.

A convoy should be divided into four parts; and each part, when consisting of the following articles, should be placed thus:—baggage and provisions should form the first, third, and fourth parts, and similar articles should be distributed among each of the three, so as to preserve, in case of accident, a small supply of each article; the most valuable articles, the money and papers, should form the second part, of which the centre should be occupied by the combustible stores, such as powder, &c.

When the convoy is composed of carriages loaded with powder, or inflammable articles, they must be constantly inspected, and made to travel at a steady pace, keeping on the soft ground, and in file. Nothing else should be allowed on these carriages; no one should get on them, but for the purpose of repairing them, in case of accidents, or on duty, and then with every precaution.

Villages ought not to be entered if they can be avoided. It should be ascertained whether they can be passed by roads leading outside. Guides must be obtained. An officer may be sent to reconnoitre the roads, which should not be attempted, unless his report is favorable. If the villages must be entered, then the proper authorities should be called on, to have the smith's and farrier's shops closed, and every other place that might give reason to fear an accident. The streets, through which the convoy has to pass, should be watered. No smoking must be allowed in the escort, nor yet amongst the bye-standers.

The convoy must never halt in villages, but should be parked outside, in some safe and convenient place, selected beforehand, and at a distance from any habitation.

These precautions are applicable to every convoy in which powder forms a portion of the load of the carriages.

When the convoy is composed of beasts of burden and of carriages, the former should be in front, for, were they

to follow in rear, they would find the roads damaged by the carriages; it would also be more easy, in case of any disaster, to save that part of the convoy when in front than in rear.

The officer commanding the detachment of the centre, is charged with the surveillance and defence of the second and third divisions of the convoy; the officer in front has the first, and the one who is in rear, the fourth.

In front and rear of each part of the convoy, there should be a waggon of the advance department, carrying nine or ten portable *chevaux de frise*, which may be placed upright in an instant. These *chevaux de frise* are disposed in the form of a redan, at each of the salient angles, so as to cover the front and rear of each part of the convoy.

Each of these *chevaux de frise*, should be from eight to nine feet in length, including the small chain by which they are fastened together, and should be defended by four or five men placed behind them rank entire, for which purpose, two sections are requisite in front and rear of each part of the convoy. A half section may moreover be distributed on each side, about the centre of the division, between the carriages, and behind their wheels.

Each part of the convoy requires about 200 foot soldiers for its escort and defence. Should there be more, the surplus will occupy the centre space, on the side towards the enemy, selecting favorable ground where the guns may effectually protect the above disposition, and at the same time support the cavalry. The guns will be placed amongst the *chevaux de frise*, in front or rear of the convoy, according to the nature of the ground.

These preliminary arrangements being completed, the commanding officer acquaints those next him in rank with the destination of the convoy and the route to be pursued, and will concert with them measures to ensure its safe conduct. He explains to the officer commanding the reserve, his duties during the march and in case of attack; and to the officer commanding the centre, all that specially regards that part.

He then reminds the officers commanding in front and rear of the convoy, of the principles by which they should be guided. These four officers being present, he calls up those commanding the advanced and rear guards and the scouts, and points out the precautions to be taken to prevent surprises. In giving these different instructions, he asks each officer his views respecting his own duty, as well as that of those under him, taking care, however, not to inform them of any thing which it is not necessary for them to know.

In order not to fatigue unnecessarily the draught horses, the commanding officer will order the waggons to be harnessed by fifties at a time, for it requires, at least, half an hour to get that number fairly started, even when the starting place is dry, and the road in good order.

As soon as the commander of the convoy has given his instructions, and issued the general orders for the guidance of those under him, he regulates the general police of the convoy.

The troops forming the reserve, those at the centre, at the front and rear of a convoy, should more particularly observe the following directions :—

The reserve should always keep in a line with the centre of the convoy ; and whenever a defile, river, ford, or bridge, is to be passed, if the rear is secure, the reserve will pass first ; if not, it will march with the rear guard : should there be equal danger in front and rear, it may separate into two equal parts.

Should the enemy show himself, the reserve will take post in front of the point menaced, and stop him in order to give time to the convoy to continue its march ; and as soon as the latter has gained ground, the reserve will place itself in rear. Should the enemy renew his attempts, the reserve will again interpose between him and the convoy ; and such should be its mode of action.

Should the enemy divide his forces, and attack simultaneously two parts of the convoy, then the reserve must

be also divided, at least if it can thus advantageously resist the two hostile detachments at once : if not, then it should first make a vigorous attack on the nearest of the two, and afterwards on the other.

As the fate of the reserve generally decides that of the convoy, the troops at the centre and in front and rear, should send it assistance, if called on to do so, and should carry out the orders of its commander.

The troops of the centre, divided into two equal portions, but not separated, should march about the centre of the convoy. This centre should be indicated by an interval of six yards, through which the troops may pass, if they have to change their position, in order to reach that flank of the convoy which is assailed.

Should the enemy make an attempt on the convoy, about the second part or the end of the third, half of the troops of the centre may post themselves opposite that threatened more especially when the reserve is at a distance ; but the officer commanding the centre detachment, before deciding on such a movement, should have first well observed the enemy's manoeuvres, and should be convinced that he is making a real attack ; for it often occurs, that a part of the convoy, which it is not intended to attack, is menaced, in order to draw off the troops charged with the defence of other parts, which being thus left unprotected, may be the more easily overcome.

The troops in front and rear of the column, should always maintain the places assigned them, and must not leave them for the purpose of engaging the enemy : in case of attack, they should confine themselves to keeping off the assailant, by a well directed fire, being careful however of their ammunition, so as not to be without any, should unforeseen circumstances render its use necessary.

The advanced and rear guard, the scouts and flankers, should follow the rules laid down in the chapter on "Marches."

Should the convoy during the march present a flank to the enemy, the commander of the escort will reinforce the troops on that side, and will himself remain about that point, where most danger is to be apprehended, and more especially at that whence he can see all that goes on, and can transmit his orders promptly to all the other points.

Detached bodies of infantry, taken from the troops in the centre, should march along the flank of the column, at short intervals, their strength being proportioned to that of the escort, and to the number of carriages of which the convoy consists.

A half-section, commanded by an officer, is sufficient to watch twenty-five carriages; a trustworthy and intelligent soldier should be attached to each carriage, with orders to keep the line well locked up, not allowing the smallest interval between the carriages, and to prevent the drivers from unharnessing their horses, or from cutting the traces and running away, as this is often done in the moment of confusion, caused by the appearance of the enemy.

If it is not possible, without weakening the escort too much, to tell off a soldier to each carriage, there should be, at least, one to every three: but should the strength of the escort not admit of this, the police of each of the four parts must be entrusted to a detachment of four or five mounted men. In this case, they pass from the rear to the front of the part under their charge, and then let the carriages pass them when they again regain the front, and thus perform the duty which the foot soldiers would have done.

These guards, whether infantry or cavalry, should make the drivers obey with promptness all the orders they give; and should they attempt to escape with their horses, or even without them, the guards should be authorized to fire; but, except in such a case, neither the drivers nor their horses should be subjected to any sort of bad treatment.

When a carriage breaks down, the guards of the following carriages should quickly drag it out of the middle

of the road, so that the advance of the convoy may not be retarded. Should it be impossible to repair, in a short time, the damage that the carriage may have sustained, a horseman should be sent immediately to the nearest village to look for one in its place; should the villages be distant, and there be no means of replacing the broken carriage, its load must be distributed on the others which are the least loaded, and the horses should be sent to assist the weakest teams. Should it not be possible to divide the load, and should this not be of any great value, the magistrate of the nearest place must be sought for, and the carriage given into his charge, requiring from him a receipt for the articles entrusted to him, and warning him that he is personally responsible for them.

If, by any accident, horses or carriages are lost, the same system must be followed. If only a few horses are lost, some may be taken from the best teams or from those carriages which are the least loaded.

If the driver is obliged to stop for a few moments in consequence of some trifling breakage, he should be made to re-enter the column, at the end of that part of that convoy to which he is attached.

When the convoy passes a ford or a small piece of water, the drivers must not stop to let the horses drink; they should not be allowed to sing or to crack their whips; indeed, absolute silence should be imposed occasionally, without any necessity, in order the more certainly to obtain it should circumstances render it indispensable.

Whenever the state of the roads will admit, the length of the column should be diminished; in which case, each part of the convoy will form up, and march on two lines abreast, leaving the middle of the road clear.

A convoy should never form in two lines, unless the road is sufficiently broad to admit of three carriages passing abreast, but an interval of three feet between the files is enough.

A convoy should not be formed in double file when the

defiles are of frequent occurrence, as it should be able to maintain that order for an hour at least ; as the doubling behind each other at the passage of every defile would occasion too great a loss of time.

When the files of carriages of a convoy are to be doubled, the first part goes at once to its appointed side, slackening its pace a little. This movement should commence with the last carriage of that part, and be carried on successively to the head ; the second part of the convoy must quicken its pace a little to get abreast of the first ; so with the third part, and with the fourth, which must come up as quickly as possible to join the third.

When the files of the convoy are to be reduced again, the first part quickens its pace, whilst the others wait till they can fall into their places in file.

When the convoy is doubled, the troops marching in front should fill up with care the interval which may be left between the two files.

The length of a convoy may also be diminished by making it march in several columns, in which case, care must be taken that the different routes of the columns do not traverse the same passes ; for then, one column would be obliged to stop to let the other defile, and the proposed advantage would thus be lost.

In a plain, the cavalry should be at the head of the advanced guard, and the infantry in rear.

The cavalry of the advanced guard should send strong and frequent patrols along all the roads leading into that which the convoy follows. These patrols or reconnoitring parties should examine the country with the most scrupulous attention, and should push their scouts as far as possible without exposing them too much.

When cavalry brings up the rear, it should act as that of the advanced guard, and should relieve the patrols of the latter.

With regard to the cavalry flanking the convoy, it should keep in small bodies at a greater or less distance,

according to the probability of danger and to the nature of the ground. These small bodies send out scouts, who follow the heights in the neighbourhood of the column, keeping along the summits, so as to discover any troops that may be approaching from the other side.

Each of these bodies should, moreover, have a small detachment on its outer flank, under the command of an officer, who should send out flankers to communicate with those before mentioned.

When these precautions are observed, the enemy cannot possibly approach the convoy, so unexpectedly, as not to allow of its making preparations of defence.

Such is the order in which the escort of a convoy should march, when traversing an open country; but this will not be the same in a broken and mountainous country, or one abounding in defiles; for, in the former case, several columns may be formed, and they may be so disposed that wherever the halt is made, the convoy finds itself already parked.

In a very rugged country, the infantry should be at the front of the advanced guard, and also at the extremity of the rear guard. They should flank the convoy, and push their scouts to some distance; again, when the ground is varied, both infantry and cavalry should be used.

When there are guns, some should be attached to the advanced or to the rear guard, according to the quarter where the attack of the enemy is most to be feared.

The advanced guard, provided with good guides, should march at about a thousand paces from the head of the convoy, leaving detachments of cavalry or infantry, according to the nature of the ground, opposite the defiles it may pass on the right or left of its route; on the approach of the rear guard, these detachments will fall back on it. The rear guard should be about a thousand paces in rear of the convoy.

A certain number of workmen, furnished with tools, should march with the advanced guard, to repair and widen

the roads, which precautions facilitate the march of the convoy, and prevent the carriages from becoming damaged and from getting fast in the mud.

When the commander of a convoy is certain that the enemy can approach by one pass only, he may assemble the greater portion of his troops to guard it, and may make the convoy file past under the protection of a small escort; but, before deciding on such a step, he should be well acquainted with the local features of the country, and be certain that it is quite impossible for the enemy to attack the convoy from any other direction.

In passing a narrow gorge, or other defile, of which the sides are flanked by mountains, part of the infantry should march along their summits, unless, indeed, they are quite inaccessible, in which case, they are the same for the enemy; and then, having nothing to fear on the flanks, the advanced and rear guards may be strengthened, being the only parts exposed to attack.

If the country traversed is flat in some places, and broken in others, the dispositions of the troops should be changed according to circumstances.

The officer commanding the detachment at the head of a convoy, should march slowly and steadily; he should halt from time to time, so that there may be no intervals left between the carriages, for were the teams to be over-driven, they would never reach their destination.

In order to conduct a convoy with safety, it should be frequently made to fall in with regularity; this should be done every five or six miles, more particularly when the enemy is in force in the neighbourhood. By taking this precaution, the opening out of the files of carriages will be diminished, which the smallest impediment, and most trifling delay, may occasion; and the escort, being united, can oppose a more efficient resistance to the attempts of the enemy.

Should the convoy have to pass through mountainous countries, or marshes, or any other difficult ground, which

might render it necessary to lock the wheels, the pace must be diminished, to give the carriages, which have lost their distance, time to regain their places; it is true, that the arrival of the convoy will be retarded by this measure, which is, however, indispensable for its safety; and the officer commanding, must bear in mind, that he is bound to convey to its destination, not a part only, but the whole.

Circumstances sometimes occur which render the prompt arrival of a portion of the convoy so desirable, that it is necessary to omit taking these precautions, more particularly when near the enemy; but these cases occur so seldom, that they should be considered as exceptions, the result of urgent necessity, and as allowing merely occasional deviations from the established rules.

When the roads are so bad as to retard the march of the rear of a convoy, the front must halt, and wait until all the carriages are closed up; this movement should be executed at a given signal.

Should it be thought that the sound of bugles or drums might affect the safety of the convoy by attracting the attention of the enemy, the orders should be taken to the head of the column by mounted orderlies, who should always accompany the commanding officer.

To avoid delays, every possible precaution should be taken to clear away, or at least lessen, those impediments and difficulties, which are so often met with in the march of convoys, such as defiles, hollow roads, heights, &c.

The exact situation of these difficult places being known, from the preliminary reconnaissance of the route the convoy has to pursue, detachments of cavalry or infantry should be sent beforehand into the nearest villages, with orders to assemble a sufficient number of inhabitants, with shovels, pickaxes, hatchets, bill-hooks, and ropes, and to place them at the worst spots, under charge of some sentries; there they should await the passage of the convoy, to assist in dragging or pushing the carriages through the mud, as well as to aid in making any requisite repairs; they

should also repair those roads which are in the worst order.

When any marshy spots are met with, several layers of fascines should be placed over them, and then branches and boughs, which should be covered with a little earth; this will prevent the carriages from sinking; and should any of the bridges on the route be in bad order, they ought to be repaired at once.

The officer, at the head of the convoy, should make the carriages double their files on leaving a defile, whenever the ground will admit of their so doing.

Defiles are critical situations, where all precautions should be redoubled; and the commanding officer should send detachments, taken from the reserve, to occupy the head and the flanks of the defiles through which the convoys have to pass: these detachments should push reconnoitring parties two or three miles ahead, more particularly in the supposed direction of the enemy.

Whilst these detachments are exploring, the carriages should be doubled up in four, eight, or ten lines abreast, when the ground will permit, so that the troops forming the escort may be more concentrated.

When a convoy is thus formed up, the troops of the centre may join the advanced guard, and cover the carriages; those of the rear guard should dispose themselves in order of battle, facing the country already traversed. The small bodies and sections flanking the convoy, take post on both flanks, and the reserve takes up a position on the point whence it may easily assist the parts more exposed.

When the country, in front of the route to be pursued, has been well reconnoitred, the advanced guard and troops of the centre pass the bridge or defile, and advance a sufficient distance to allow of the convoy being parked on the other side; the reserve and the flanking parties take post on the flanks, and the rear guard follows.

When the carriages and escort have past, strong de-

tachments should be sent out in every direction an hour before the convoy marches off, in order to search the country closely; and if no enemy is in sight, the convoy recommences its march in the same order as it was in before the passage, unless the nature of the country is such as to require some change.

A convoy might be easily carried off, even by an enemy of inferior force, were the usual order of dividing the escort between the front, centre, and rear adhered to, in passing a defile; for, were the attack made on the front, while the centre is still shut up in the narrowest part of the defile, with no more than room for the passage of one carriage at a time, the different parts would have no means of assisting each other. This is why five or six detachments should be formed in such cases, and a strong reserve should occupy the heights bordering the defile, after the country to be traversed has been reconnoitred, and carefully searched.

There are circumstances, where the ordinary rules may be set aside, and the escort may be divided into as many detachments as the nature of the country may require, the same precautions not being applicable to dangerous ground, as to flat and open countries.

In every passage of a defile, the dispositions should be made with reference to the direction from which the enemy will most probably approach; and those troops, which are not specially attached to any particular part of the convoy, should be sent to the front or rear guard, or the flanks, according to the intelligence that may be obtained of the enemy; bearing in mind, that it is of the greatest importance for the safety of the convoy to discover the adversary when at a distance, so that he may not be able to approach until the different parts of the convoy have time to form up, and dispose themselves in the order before indicated.

If, during the march, the enemy should threaten an attack in the neighbourhood of a village, the carriages should

immediately be made to close up in lines abreast of each other; and should be formed as they come up into a square park, as large as possible, in which the infantry will be placed, the cavalry remaining outside on the flanks, under the protection of the fire of the infantry.

But, before forming up the convoy in this manner, it should be ascertained, whether the enemy is able to make his attack with superior forces, for if not, the order of march should not be changed, and the convoy may proceed on its way. It is sufficient for the troops which are nearest to assist those attacked.

If, on the first intelligence of the approach of the enemy, the convoy should be far from any village or inclosure, the head of the convoy should halt where it is, as close to one side of the road as possible, so as to admit of other lines being formed abreast; but, should it be in a defile, measures must be immediately taken, 1st To get clear of it; 2nd To prepare the *chevaux de frise*; and 3rd To distribute in their rear, the sections which are to defend them; whilst the infantry, by its fire, repulses the assailants; the cavalry formed in small bodies, is ready to fall on such of the enemy's infantry, as are dispersed in skirmishing order; a movement easily executed, because, sallying out at intervals purposely left, the cavalry is protected by the fire of the infantry.

As soon as the enemy is completely repulsed, the convoy will resume its march in the original order.

In a long march, when it is necessary to feed the horses, a halting place should be selected, sufficiently spacious to contain all the carriages arranged in several ranks, and in such an order as will admit of their resuming their march without difficulty; the troops then form up in line, half on the side facing the enemy, the remainder on the flanks and rear, protecting all parts of the convoy. The flankers, and advanced guard, will remain at their usual distances, one half of each being under arms in line facing the direction whence the enemy may naturally be expected.

When one half of the advanced guard has had sufficient time for repose and refreshment, it will take its turn of guard; and so with the reserve, and the other parts of the escort.

The drivers should not unharness their horses, but should be merely permitted to go away for the purpose of cutting forage, provided they do not go so far as to run a risk of being carried off. When it is known beforehand that the convoy will have to halt on the road, it is better to give orders to the drivers to provide themselves with the forage necessary for their horses.

When towards the end of a march, a village or defile is reached, which would have to be traversed the following day, it is better to pass through at once, and park the convoy beyond it, because these difficult passes are more easily traversed while the carriages are in file; this advantage should, however, be considered, as subordinate to the safety of the convoy.

When a convoy halts, for the purpose of parking the carriages for the night, the following directions should be attended to: 1st A place should be selected which is safe, sheltered, and covered by some river, ravine, or natural defence; 2nd The carriages should be so disposed, as to form a species of entrenchment, flanked by the artillery, and protected by the *chevaux de frise*, carried in front and rear of the convoy; 3rd The troops of the escort are placed behind these, so as to be able make an effective defence; 4th The guards, which are posted on all sides to cover the convoy, must observe all that is prescribed for the safety of advanced posts; 5th Frequent patrols should be sent out to reconnoitre in every direction, to gain intelligence of the enemy, and of the slightest movement he may make. With these precautions, surprises need not be feared.

Should no position for the convoy be met with, such as that described, or should it be threatened, so as to be unable to continue the march, then it should be turned off from the road into some field, capable of containing it, and should be disposed in one of the following modes.

The circular formation is, in general, the best mode in which the carriages can be arranged, and should be adhered to as closely as possible : but, as it is difficult to describe a circle, the formation should first be made in a square, when it is easy to reduce the angles, and give the necessary convexity to each face.

Whatever be the figure of the park, it may be in single or double order.

A park is single, when the carriages are in one rank only ; it is double, when in two ranks ; the preference is to be given to the double formation, more particularly, when the convoy is sufficiently numerous to enclose, even in this order, all that should properly be placed within it.

Each mode has its advantages and inconveniences ; circumstances alone can determine which should be selected.

In the double formation, the park being less extensive, is more easily defended, so that this will be adopted when it is advisable to contract its limits, and the other formation, when a greater extent is deemed desirable.

When four-wheeled carriages are placed alongside of each other, the shafts or poles should be turned towards the outside, but those of two wheeled carriages may point inwards.

When the carriages are placed side by side, an interval of three feet should be left at every sixth carriage, this space should be covered by a carriage placed six paces in the rear of the outer line as a sort of traverse.

The carriages should fit close, the axletrees of each being a little in front or rear of each other.

When four wheeled carriages are placed one behind another, their shafts or poles must point outwards, the bodies being close together.

When the park is composed of two-wheeled carriages, the shafts of each should be under the carriage in its front.

When the park is formed of carriages placed one behind the other, an opening should be left at every fourth, covered by a carriage inside, as above described.

Those carriages loaded with valuable articles, such as money, papers, &c., should be in the interior of the park.

When there are any carriages loaded with powder, or other inflammable materials, they should never be put in line with the others, because it would not be possible to fire from behind them without risk; they should be grouped close together in the interior of the park; when the convoy consists entirely of such carriages, they should be parked in a solid square, and the escort must be kept at a hundred yards from them at the very least.

In every other case, the carriages should protect the troops; but in this, the troops must protect them, and should be at a distance, so that when giving their fire, they incur no risk of the disastrous results which would attend an explosion.

The horses are placed in the interior of the park, each team being picketed opposite its carriage.

When parking for the night, sentries and the necessary guards must be posted outside to prevent surprise.

These should be furnished from the advanced and rear guards, and the flanking parties; the reserve should occupy the centre; the detachment from the front, will occupy the middle of the first part of the convoy: half the troops of the centre, the middle of the second part; the other half, the middle of the third; and lastly, the detachment from the rear, will occupy the middle of the fourth part. Whilst one half of these detachments are reposing, the other half is on guard.

When guns, in serviceable order, form part of the convoy, they should be disposed round the circumference of the park, when the circular formation is adopted, or at the angles of the square on the same line with the carriages taking care to have a detachment of cavalry near each battery to cover it, and one of infantry in rear for its support.

When the convoy is parked for the purpose of repelling

an attack, the troops should be disposed in nearly the same manner as they are for the night. Each detachment should throw out some skirmishers in front of the park, whilst others mount the carriages.

If the enemy continues his approach in spite of the fire of the skirmishers, the reserve should go to the support of the part threatened, or should make a vigorous sally if thought advisable; and at daybreak, or when the danger is over, the convoy continues its march in the order above indicated.

It should be born in mind, that to defend a convoy successfully, all the preparations for defence should be completed in half an hour: for, supposing the commander to have thrown out reconnoitring parties three miles in every direction, and that the enemy is in force at that distance, it will not take him more than half an hour to reach the convoy.

The quickest mode of defending a convoy against an attack of cavalry, is by doubling the line of carriages, making them face each other in succession, those of each line being side by side. The horses of each pair of carriages will then be facing each other, with but a small interval between their heads, the backs of the carriages being outwards; and as they come up, those of each part should be similarly arranged.

A convoy is generally thrown into disorder when the enemy's cavalry succeeds in falling on the horses, cutting their traces, and, sometimes hamstringing those which they can not carry off; it is important, then, to protect the horses, and by the disposition just explained, it is evident they will be sufficiently protected, more especially if the different parts of the convoy are so arranged, that, occupying as small a space as possible, they may yet resume their march without difficulty, as soon as the enemy is repulsed, or it is ascertained that his forces have been exaggerated.

A convoy, consisting of a hundred carriages in file, each with four horses, occupies twelve hundred yards; arranged

in the formation which has just been explained, it will occupy only two hundred, allowing four yards for each carriage; thus, the last carriage will have a thousand yards to traverse, before reaching its proper place in the formation, where it should arrive before the cavalry of the enemy, which has five thousand yards to traverse in the same time; this is easy, unless the roads are in a very bad state, and when that is the case, the reconnoitring parties must be pushed further forward in proportion to the time required to make the preparations for defence.

If the convoy consists of six hundred carriages, its length will be nearly seven thousand two hundred yards; this convoy would be divided into six equal parts, which parts being closed up on the leading file of each, on the approach of the enemy, will be distant about a thousand yards from each other, and will form, as it were, so many separate convoys; then, as the directions for one part apply equally to the others, the same precautions and modes of defence in the moment of attack, are to be used by a convoy of six hundred carriages as by one of a hundred.

When the advanced guard of the escort of a convoy approaches the intended halting place, it should halt as well as the escort itself, and make the best dispositions for protecting the entry of the convoy.

The commanding officer of the escort should take care that the convoy is conducted to the appointed place by a detachment under the command of an officer, and should remain outside with his escort, until the charge of the whole has been given over to the proper officer.

The entry of a convoy into a fortified place should be attended with similar precautions; and, moreover, the officer commanding the garrison, should send out a third of his force, three or four miles on the road by which the convoy is advancing, whilst another third is drawn up on the glacis on the same side, some field pieces being placed on the crest of the covered way, to protect the escort, in case of its being hard pressed by the enemy.

The attack of convoys is less difficult than their defence, for the assailant has always the advantage, when the party attacked has to defend a considerable line of carriages, and must conform to the movements of his adversary, who selects the time, place, and mode of attack.

The duty of the escort is, to prevent the convoys from being taken, and it cannot consequently venture on any hazardous enterprise; its movements must, necessarily, be restricted, and should be conducted with a circumspection, almost amounting to timidity; whilst the assailant, well informed of the strength of the escort, its disposition, and of the assistance it may be able to receive, and knowing the country thoroughly, turns to account all these advantages, as well as those which intelligence and practice may suggest; combining his measures with accuracy, and preparing ambuscades well calculated to second his attacks.

When the forces of the assailant are superior to those of the escort, he should dispose his troops skilfully, and by attacking simultaneously the front, rear, and centre, oblige the forces of the escort to separate. But it is when the attacking party is the weaker, that the ability of the officer commanding must compensate for his want of numbers by means of stratagems, and by preparing ambuscades, into which the whole convoy may fall, and be destroyed, notwithstanding the numerical superiority of its escort.

For instance, the officer appointed to attack a convoy, should allow the greater part of the escort to become engaged in a defile, and, as soon as the file of carriages effectually prevents it from retiring, he should fall on the centre and rear, which will be beaten easily and without fail.

Again, if an officer should not have a sufficient force to enable him to make three separate attacks, he should make two, one on the advanced, and one on the rear guard, and may thus hem in the convoy, as the drivers generally endeavour to escape, with their carriages, to the right or left of the road. Still there are cases, in which it is better to

attack a convoy in the centre than any other part ; as for instance, in an open plain, where advantage has been taken of some hedge or hollow road, or standing corn, to prepare an ambuscade.

The attack, in such a case, should commence by two false attacks, directed against the extremities, immediately succeeded by the real attack on the centre : if the escort is beaten, and the convoy separated before it has had time to close up or to form a park, it will be inevitably taken or destroyed.

In broken ground, or where there are no outlets on either side, it is always better to attack the extremities of a convoy.

Every officer entrusted with the attack of a convoy should be made acquainted with its object and composition, as well as with the nature of the country, the roads it will have to traverse, and the strength and composition of its escort. He ought, moreover, to know the hours at which it starts, the length of its march, and its destination, so as to be able to make his dispositions accordingly.

He should endeavour to reconnoitre, in person, the order of march of the escort, taking care to conceal himself so as not to alarm his adversary.

Should the convoy be considerable, the extent of ground it covers may give facilities for attacking the escort with advantage.

It should be carefully considered whether the convoy is so situated, as to be able to receive assistance, and from what quarter, as the attack should be made on the opposite side.

When, for the protection of the convoy, the escort is divided into three equal portions, in the front, centre, and rear, the attacking party should determine from the nature of the ground, which part to fall on first.

Should it be determined to attack the head of the escort, part of the troops may make a detour to intercept and engage the enemy's forces, that would be sent forward from

the centre and rear guard ; as a convoy advances slowly, there will be time to make these arrangements, and the real attack should not be commenced, until it is positively ascertained, that both the other parts of the escort are occupied by the false attacks. By uniting the greater part of the force against one detachment of the escort, a great advantage will be gained.

When this detachment is beaten, a sufficient force should be sent to pursue it ; another body will be detached to fall on the convoy, while the rest will attack the nearest part of the remainder of the escort, assisted by the party making the false attack, who will now act most vigorously.

The assailing party should thus attack all who resist, pursuing the flying enemy, and falling on the convoy ; taking care always to have a reserve to act in case of need, and to serve as a rallying point for the troops occupied in the attack and pursuit.

The most favorable ground for the attack of a convoy is, where the carriages are impeded in their progress by defiles, formed by villages, bridges, dykes, or hollow roads, or by any other impediments which the ground or the roads may present, calculated to retard the convoy, and to prevent the escort from taking up an advantageous position for its defence.

Woods and broken or hilly ground, where the movements of troops may be concealed, are most favorable for the attack of a convoy.

The officer entrusted with this enterprise should endeavour, before commencing his attack, to stop the convoy, and throw it into confusion.

In order the better to succeed in this object, he should engage the head of the convoy with some skirmishers, while small detachments thrown on the flanks annoy it from all sides, the mass of his troops being kept together.

When the march of a convoy is conducted with proper precautions, and its escort is strong in infantry, it is difficult for cavalry alone to make much impression on it, and

complete success can only be expected when the cavalry is accompanied by some horse artillery, with a few howitzers.

When the attacking party is accompanied by infantry, the difficulties are less ; the best mode of proceeding is, to seize the opportunity, when the convoy is engaged in a defile, to send on the infantry to open a fire on it from the flanks ; the dead horses will prevent the file from advancing, and the whole will soon be in disorder : the foot soldiers may be taken up behind the cavalry for the purpose of being rapidly carried to the head or flanks of a defile.

When the convoy is in disorder, and the troops charged with its defence are drawn off from the real point of attack, or when the troops at that point cannot be reinforced, the projected attack should be made with the utmost impetuosity, and without waiting to fire.

Should the line of defence be broken, and the convoy itself be reached, the men must not be allowed to leave their ranks for the purpose of pillaging ; which is always to be feared, more especially when the convoy contains articles likely to tempt the men.

In such cases, the main body of the troops should be kept together, and at a certain distance, to oppose the reserves, which might be brought up to the assistance of the escort, and to complete the defeat of the enemy's troops which are already broken ; a very small number of men will suffice to destroy the convoy.

As the head of the convoy is covered by the advanced guard, and a large portion of the escort is there assembled in a small space, it would not be prudent to attack this advanced guard, even were it almost certain that, by forcing it, the most fortunate results would be obtained.

Still, if carriages loaded with money, which it is an object to obtain, were at the head of the convoy, the advanced guard should be attacked first.

The flanks of a convoy cover so much ground, that they

are more exposed than any other part; the attacks should, consequently, be directed against them, and the nearer the point attacked is to the advanced guard, the less chance there is of any of the carriages escaping; but were the attack directed against the rear guard, the reverse would be the case. In order to attack a convoy with a good prospect of success, it should be on the line of march; but, if it is certain that no favorable opportunity of so doing is likely to occur, and should the convoy have had time to make a defence by means of the carriages, then artillery must be employed, and more especially howitzers, their fire being directed against the carriages, which will ensure the success of the attack: and, should any of these be loaded with powder, or other inflammable articles, they ought, if possible, to be blown up before the infantry advances.

If the convoy has been able to complete the formation before described, in which it is flanked and defended by infantry, posted behind *chevaux de frise*, then, in default of infantry, the attacking party should make some of the cavalry dismount, and endeavour by their fire to silence that of the sections defending the *chevaux de frise*; if two only of these are forced or destroyed, the part of the convoy behind which they were posted would remain defenceless.

The best mode of throwing a convoy into disorder, is, to have, as has been already said, some horse artillery with howitzers; by this means, the order of the convoy will soon be destroyed, and every thing combustible being fired, the greatest confusion will be inevitable. It is to guard against such a contingency, that, in the defence of convoys, they should be divided into several parts, each being defended separately.

The cavalry, which is but ill calculated to assist in such attacks, more especially when the convoy is defended by infantry, should be employed in pursuing the escort after its defeat, and in bringing back the horses that the defenders may have let loose, so as to be able to make use of them in carrying off the carriages seized.

The escort being put to flight, and pursued, the carriages should be driven off at once, and by the nearest road, to some place of safety. Should there be none within reach, the horses alone may be taken away, their traces being cut, the carriages set on fire, and the provisions and other articles destroyed; if it is not possible to carry off all the horses, those which are left should be hamstrung.

When it is of importance to carry off any part of a convoy, the troops attacking it should take with them some horses ready harnessed, for it is seldom that both horses and carriages can be secured at once.

If the troops charged with the attack of a convoy find themselves too weak to make it with advantage, they should, at all events, harass the convoy on its march as much as possible, making up by the celerity of their movements for what is wanting in numbers.

The officer commanding the party should, above all, endeavour, 1st To break down the bridges; 2nd To destroy the roads which the enemy's advanced guard would have to follow; 3rd To keep his force together; and, 4th Not to weaken it, by sending away detachments. In such cases he may easily avoid being attacked by the escort, which can never venture far from the convoy.

The troops of the attacking party should keep those of the escort in a state of constant alarm; and when any favorable opportunity offers of reaching any point of the convoy, they ought, without hesitation, to take advantage of it to do as much damage as possible: should their efforts have no other result than to retard, by a few days, the arrival of the convoy, the consequences to the enemy may, in some cases, be very serious.

A convoy of 500 carriages protected by a force of 2500 men, may, if the country be at all broken, be retarded in its march by a party of 250 if well commanded.

Whatever advantage may be obtained, time should not be lost in pursuing the beaten escort, for the capture of the convoy being the main object, the carriages composing

it should be carried off at once to some place of safety, previously selected for that purpose; when the distance is too great, or the enemy's quarters too near, or the roads too bad to allow of so doing, then the carriages and their contents must be destroyed and the horses carried off.

The foregoing principles relate to the management, as well as to the attack and defence of convoys by land. The following relate to those conveyed by water, whether ascending or descending rivers.

As soon as the officer entrusted with the escort of a convoy proceeding by water, has made himself acquainted with its nature, and with the course of the river, the troops composing his escort should be divided into four parts; two of these will be sent on board of the boats, the remainder will go by land; the two last will consist of all the cavalry and of the strongest and most active men; these should not carry anything but their arms and ammunition, and they must carefully examine both banks to a considerable distance from the stream, as well as every place where an ambuscade might be prepared.

The scouts, consisting of about a fourth of the party on shore, should be furnished by the cavalry, and should always keep about three-quarters of a mile in front of the convoy; leaving some men at intervals to convey rapidly any intelligence affecting its safety.

One quarter of the escort should march at the head of the convoy, another in the rear, and the last should cover the flanks and give a rear guard: these three parts should be as nearly as possible half cavalry and half infantry. This arrangement is to enable each horseman to take up a foot soldier behind him in the event of the convoy being carried down by the current more rapidly than a man can walk.

When the men and horses are tired, the convoy should stop in the middle of the river or in some creek on the side most distant from the enemy, and should take similar steps when halting for the night.

Every large convoy should be accompanied by a certain number of boats without cargoes, which may be required to transfer the escort from one bank to the other, or to convey ashore reinforcements of men and ammunition, or, lastly, to facilitate its retreat should it be unable to defend itself.

When the scouts perceive any of the enemy's troops, they must immediately make it known by some preconcerted signal. The convoy must then, 1st Assemble close together; 2nd Two-thirds of the soldiers on the boats of the convoy will get into the spare boats; 3rd The convoy will go towards the opposite bank; 4th The spare boats will approach the bank where the signal was made and will wait there.

When the scouts confirm the report of the approach of the enemy, the detachment at the head of the convoy will immediately advance; the convoy will keep close to the opposite bank, while the spare boats keep to that where the alarm is given; if the constant firing shows that a real attack has been made, these boats will land the men on board of them, and will then go to the opposite bank for the other half of the escort. The convoy should then stop, while the spare boats keep in the neighbourhood of the engagement.

Should the escort be completely beaten, the convoy must start at once, and by rowing fast, and by prudent measures, it may yet be saved; but, in the event of there being no possibility of escape, it is better to sink it than that it should fall into the hands of the enemy.

The escort should, while fighting, move towards the point where the spare boats are, and when on board, the current will soon take them down to join the convoy.

If the escort is successful, the former order of march should be re-established.

When the enemy makes his appearance on both banks, the spare boats should separate into two divisions, proportioned to the assistance required by the troops of the escort on each bank.

When a convoy is ascending a river, the escort should still be in four parts; one in the boats, two on the bank next the enemy, and one on the opposite side; the rear guard may, in this instance, consist of but few men.

Convoys ascending rivers may be under sail, or may be carried up by the tide, or they may be towed up by men or horses. The two first cases are very similar to the descent of a convoy, but the third requires particular care with regard to the bank on which the men or horses are towing; and, should the enemy make his appearance, the measures mentioned above must be adopted.

Should the escort be beaten, the convoy must go down the stream, using their oars so as to get away from the point attacked as quickly as possible; it may thus soon be out of danger.

When a convoy ascends a stream, it may be more easily carried off, its progress being much slower.

In either case the measures above laid down are the best for ensuring its safety; the boats being removed from the bank attacked, and placed, if possible, under cover of any small islands, where they may be secure till the assailant retires, or till they receive assistance.

A convoy of boats may generally be easily taken, even with a small number of troops: but it is necessary to have accurate information of its start, and of the time at which it will pass the point selected to make the attack.

The ambuscade should be formed at an elbow of the river, at some distance from the enemy's army, so that he may not hear the firing, which would enable him to send out assistance to his party.

When the place where the ambuscade is to be prepared, is known beforehand, the best plan is to start at night, with a detachment of cavalry and infantry, proportioned to the proposed object. The better to conceal the purport of the march, a detour may be made, bringing up the troops to the proper place before daylight, so that the country people may not be aware of the movement.

The necessary sentries must next be placed, to guard against surprise, and to give notice of the approach of the convoy; they should be as much out of sight as possible, and the troops should remain silent, and be kept together.

When the convoy has arrived within range of the ambuscade, the attack (if the river is broad) must be commenced by the artillery, the guns being directed against the first boat, until it is obliged to strike.

If the escort and convoy continue to advance, they should be followed, keeping up the fire on the boats, in order to sink them, or by breaking the helms to render them unmanageable.

When the river is not too wide for musquetry, the best shots should endeavour to disable the men who are steering the boats.

The cavalry should dismount, and assist the infantry, their horses being led in the rear.

Should the river form an elbow at the place where the convoy is attacked, it should be turned to advantage, by placing the guns so as to rake the first boat, which will thus be soon unable to advance, and must strike; the following boats should be received in the same manner, if necessary, although it is probable that they will follow the example of the first.

As the boats come up, their escorts should be disarmed and landed, the arms being thrown into the river, if there is no means of carrying them away.

When all the boats have given in, the most valuable articles, and those most easily transported, should be selected, the remainder, as well as the boats themselves, being sunk if of no use.

Should there be no danger of the enemy sending assistance to his convoy, carriages may be prepared beforehand, for the purpose of carrying off the cargoes, the prisoners being conducted by the cavalry: but when a rescue is to be apprehended, the convoy should be destroyed, and the

prisoners abandoned ; and in returning, it is advisable to make a detour.

When the enemy is at too great a distance to assist his convoy, some troops should be sent across the river, to secure it as soon as the escort is beaten : but, whenever troops are sent across a river for this purpose, a strong detachment must be left to prevent accidents and facilitate the return.

From the foregoing rules for the management of convoys, and their attack and defence, it must be evident how important it is that such operations should be confided to intelligent officers, combining experience and capacity, and having a perfect knowledge of the country ; such officers, in whatever situations they may be placed, will know how to make the best and most suitable dispositions, which circumstances and the nature of the ground may require.

16. *On Foraging Parties.*

THE object of foraging parties is to procure, by means of military excursions, the necessary forage for the horses, as well as the provisions, wood, and straw required for the use of the troops.

There are two descriptions of forage, green and dry.

The first comprehends grass, lucern, hay, &c., which are cut in the fields before they are ripe ; the second includes hay, vetches, straw, barley, rye, oats, beans shelled or in the pod, meal, chopped straw, and whatever else may be required, and is to be found in the towns, villages, hamlets, and farms within a given circle ; in short, before the harvest, foraging parties are sent into the fields ; afterwards, into the inhabited places.

It is equally necessary to secure the forage to be found

in the country which is the seat of war, as to deprive the adversary of it.

When it is intended to send out foraging parties, the following points should be taken into consideration : 1st What are the articles required? 2nd Whence may they be drawn? 3rd What are the best means of procuring them? Without these data, which are often only approximative, the supplies of some articles might be too large, whilst other necessities might be wanting; the men and horses might be overworked, and the resources of the country not turned to advantage.

A foraging party in quest of green forage, which, except in particular circumstances is only required for the horses, should be conducted as follows.

In order to form an accurate idea of the forage which may be procured from any country, it must first be reconnoitred.

To be able to regulate properly the distribution of the foraging parties, it is indispensably necessary to have a state, giving the number of horses belonging to the cavalry, the baggage waggons, the artillery, and commissariat, for which provisions are to be procured.

If, for instance, a foraging party of 5,000 horse is to be sent out, we must first know whether the cantonment can furnish loads for 5,000 horses in trusses of hay, or in wheat, rye, oats, or other grain. Moreover, the quality of the soil must be taken into consideration, for according as it may be more or less fertile, so will it be necessary to allow a greater or less extent of ground for each load; it should be observed, that in the most productive countries, there are some parts which yield but little; and others, such as swamps, nothing at all.

It is only by experiment that the difference in produce, resulting from the different height and thickness of corn crops, can be appreciated in any given extent of ground; but the eye soon becomes accustomed to judge by comparison of what a country ought to yield.

When circumstances will not admit of these estimates being made, or when the country to be foraged cannot be first reconnoitred, the following data, though only approximate, will give some idea of its products.

In a country not positively unfavourable for purposes of cultivation, it may be calculated that in a square league one-half will consist of cultivated ground, and the other of meadow or pasture land, woods, villages, roads, streams, &c. In the half-league of ground under cultivation, two-thirds are generally covered with crops, the remainder being fallow. Of the two-thirds, one-half is usually allotted to rye and corn, the other to barley, oats, and other crops; these data vary of course in different countries. In Suabia, for instance, where there is scarcely any fallow land, a square league will produce considerably more than in countries where there is much.

If officers will consult those works which treat of the statistics of different states, they will obtain satisfactory data as to the nature, quality, and quantity of their productions.

The following is the result of calculations made in one acre in the neighbourhood of Paris, respecting its produce in corn, oats, hay, and lucerne, all standing.

(See the annexed table, No. III.)

Where the superficies and quality of ground in a given extent of country are known, a simple arithmetical operation will give the number of square yards and the amount of forage that may be procured from it.

Thus, if forty square yards will yield one truss, and 5,000 are required, those numbers being multiplied into one another, will give 200,000, the number of square yards necessary.

It is as well to calculate for a little more than is actually wanted, in order not to be obliged to advance the chain of the foraging parties after it has been established; but this should not be allowed to lead to waste, which is as destructive to a country as it is prejudicial to the troops, for their fatigues increase, when, after having exhausted the neigh-

TABLE III.

For the purpose of Estimating the Amount of Forage which the Standing Crops will produce.

Quality of the Ground.	Description of Crops.	Number of Sheaves, and how many will produce a bushel.	Number of Bundles per Acre.	Weight of the Bundle.	Observations.
Good . . .	{ Wheat . . . Oats . . . Green Forage	800 From 8 to 10 per bushel.	— — 800 to 350	— — 10 lbs.	The Corn should be cut as close to the ground as possible. Fifty men can cut an acre in one hour, whether of wheat, oats, or grass. Every Load should weigh from 250 to 300 lbs. A load of green forage is sufficient for five horses, and one of dry forage for seven horses. Two trusses make a load for one horse; the bundles should be well tied, and the trusses placed on the horse so as to balance, taking care that they do not hurt him.
	{ Wheat . . . Oats . . . Green Forage	— — 180 to 200	— — 200 to 250	— — Ditto	
	{ Wheat . . . Oats . . . Green Forage	— — 130 to 150	— — 190 to 200	— — Ditto	

bourhood of the position which military reasons oblige them to retain, they are forced to forage at a distance from the camp.

When green forage is to be procured, officers are sent out by the quarter-master general to reconnoitre the country where the foraging parties are to be ordered; it is superfluous to remark that this reconnaissance should be concealed as much as possible from the enemy. The attention of the officers should be as much given to ensure the requisite subsistence as to prevent waste.

With this view, they should sketch a plan on the ground, which may afterwards be divided into as many parts as there are foraging parties; and in a note should be given the directions necessary to indicate to the officer commanding each party the place assigned to him.

In the descriptive note annexed to the plan, mention should be made of the number and strength of the posts which ought to compose the chain, as well as of the description and amount of troops required for its formation, including the supports and reserve.

Care must be taken not to include too much ground, in order to avoid a useless consumption; but as mistakes may occur in such matters, a portion of ground in front or on the flanks should be reserved, and pointed out to the general officer commanding the parties, so that in the event of the space first assigned proving insufficient, he may have a resource ready.

The staff officers should indicate in the plan of the ground reconnoitred, the line where the chain may be most advantageously established, and the points for the reserves and supports, as well as the places to be foraged, marking the contours of these last, and specifying the number of trusses or loads which they estimate may be procured.

The officers of the quarter-master general's department should be able to judge by the eye what number of loads any given extent of uncut meadow land or of standing crops will produce; they may easily acquire the habit of so doing,

by having a few trusses cut, and then measuring the space cleared; thus, by a little practice, they will learn to judge at first sight of what may be drawn from a country, taking into consideration its contour, and quality and state of forwardness of its crops.

In this operation, care must be taken not to found the estimate on an examination of the most fertile spots, but of those giving an average produce; and thus may be calculated the resources of a whole district, the extent of which is known. A ripe field of corn will, of course, give a very different result from one which is unripe.

The relative amount of cavalry and infantry sent to escort the foraging parties must depend on the nature of the country, according as it is open or hilly and intersected.

The strength of the escort is generally determined by the proximity of the enemy, and the time required to assemble the men of the parties in case of attack, so that they may be enabled to commence their retreat before the enemy has attacked the chains which cover them.

For this reason it is important to know beforehand what posts are best calculated to contribute to the safety of the foraging parties, and which may be made use of as rallying points in case of attack.

Foraging parties are seldom disturbed when precautions have been taken to scour the country, and to send on in front of the escorts small detachments of infantry or cavalry, according to the nature of the ground.

A reserve is necessary to support in case of need the chain which covers the foraging parties, and it should occupy that point which will give the greatest facilities for frustrating the enemy's enterprises.

When the notes above-mentioned are handed over to the officer commanding the escort, detailed information should be given: 1st Of the nature of the country about to be foraged; 2nd Of the roads by which the forage may be conducted to the camp; 3rd Of the parts which are enclosed by hedges, ditches, or other obstacles of the like nature, so

that he may open passages to allow the men to pass with ease.

In conducting a party in search of green forage, the ground foraged should not be too extensive; it is better to make two expeditions than one, so that the chain may be closer and less easily forced.

The principle of not scattering too much the parties in search of green forage, should be still more scrupulously applied to those in search of dry forage, that is to say, the villages should be searched successively, and not all at once; on the other hand, it is not advisable to occupy too small an extent of ground, because it would then be necessary to make frequent moves of the chain covering the party, which, besides the additional fatigue to the men, would occasion a considerable waste of forage.

The orders should not be issued to the foraging parties until every necessary preparation is completed.

These orders should specify, 1st Whether the corps is to furnish the escort; and if so, what is to be its strength and composition; 2nd The number of days the party is to forage; 3rd The place to which that officer is to go, whose duty it is to divide the ground allotted to his corps, and who has been previously made acquainted with the district to be foraged; 4th The time at which the march is to be commenced, the order of march of the escort and foraging parties, as well as the strength of the advanced and rear guards.

Every man of the foraging parties should be provided with cords and nets; the horses should be carefully bridled and saddled; the men should have all their arms and accoutrements.

The space to be preserved between the escort and the foraging party must depend on the nature of the ground, and the danger to be apprehended from the enemy, as well as on the amount of forage required, and the extent of the part foraged.

In some cases, in order to avoid attracting the attention

of the enemy, the escort should start but a short time before the foraging party; whilst in other cases, it should occupy the posts forming the chain long before the parties reach the ground.

The escort, consisting more or less of infantry or cavalry, according to the nature of the ground, should be provided with a few pieces of light artillery, to be kept together at the points most susceptible of defence.

The infantry should guard all the approaches with strong picquets, while the cavalry send out patrols in every direction, to discover and observe the movements of the enemy; these dispositions must be always made with reference to the local features of the ground.

Whilst the officer commanding takes such measures as the safety of the expedition may require, the different parties are spread over the ground assigned to them, being conducted there by the officers sent on in front for that purpose.

The commanding officer should, before dispersing the parties, decide on some points of formation in the rear, which will enable him to call in the whole or any part, and take them back, if necessary, in good order.

It is evident that to effect this, the different roads leading to, or traversing the ground to be foraged, should be accurately known, in order that they may be made use of in case of need; and the foraging parties should keep on them as much as possible, so as to avoid injuring the fields by crossing them.

An officer of superior rank should accompany the foragers of each corps, to preserve order, to prevent the forage from being damaged in any way, and the crops from being uselessly destroyed. He should not allow the horses to be taken into the parts to be foraged, nor into the corn fields, but should see that they are properly secured on the roads, or in places where they can do no harm.

The horses of the general officers should be sent to forage with those of the divisions to which they are attached, by which means much inconvenience is obviated.

The horses of the artillery, those of the various military departments, and of the infantry officers, in short, all horses entitled to forage, should be assembled by brigades or divisions, and be taken to forage with the troops; an extent of ground proportioned to their wants being assigned to them.

As the men in charge of the horses of the baggage wag-gons and of the officers of infantry, are without means of defence, and in alarms always cause the greatest confusion, the ground assigned to them should be in rear of the cavalry, so that they may not give trouble, and may be less exposed.

Independently of the general surveillance to which these detachments should be subjected, and which should be much more strict than that required by the cavalry, each one ought to be the object of a special surveillance; for this purpose an officer, and some non-commissioned officers from each regiment of infantry, should be sent out with the foraging parties to look after those who have charge of the horses, to take care that they do not overstep the limits assigned them, and that the servants and drivers do not quarrel.

When dry forage cannot be procured for the horses of the head quarter staff, they should be sent to forage with the rest, a particular part being appointed for them; they should be made to observe the same order as the troops, and the servants should be escorted by detachments of gendarmes, or of cavalry.

In a well-organized army, no more horses are allowed than are strictly indispensable; and although all should be provided for, still, the horses of the cavalry require more particular care, because they are not as easily replaced as those of the baggage train, and of the infantry officers. On this account the fields of oats, rye, vetches, and grass, should be assigned to the baggage, and saddle horses, when those of wheat and barley are sufficient for the consumption of the cavalry only.

It may be observed that unripe peas should never be

used as forage, being unwholesome food for horses, as are oats when mouldy, or heated; they cause sores and farcy, and weaken horses so much as soon to render them unserviceable.

It is not necessary to delay the return of the men of a foraging party until the whole are ready, as soon as several men have completed their loads, they should place them on their horses, mount or lead them, and return to the camp under the superintendence of an officer, or non-commissioned officer, who will be careful to make them observe the utmost order.

Should the enemy make his appearance during the operations of a foraging party, the men need not on that account stop work until it has been ascertained whether he intends making a serious attack.

When the escort is united in considerable masses, the officer commanding the expedition should advance to meet the enemy, in order to ascertain his strength, and to know what there is to fear.

In these situations, the talent, resolution, and coolness of the officer can alone decide on the best mode of action, as he is thrown on his own resources.

If the attack of the enemy is serious, and the officer commanding is of opinion that the escort is too weak to defend the chain, he should immediately make such of the foraging party as are nearest the enemy mount their horses and go to the front.

But, should he think it necessary to stop the expedition altogether, he must make the whole of the cavalry mount, and employ it according to circumstances, as well as the troops forming the chain and the reserve; this will enable him to resist the enemy, and give time to lift and carry off to the camp the loads that may be already cut.

If the enemy is repulsed or retires of his own accord, the foraging party will continue their work, or recommence it entirely if necessary.

In order not to leave the horses without food, in case

of the foraging parties being interrupted by the enemy they should always go out before the provender in the camp is consumed.

The further the places to be foraged lie from the camp and the nearer they are to the enemy, the less can their supply be calculated on; this is why these last should be foraged first, so as to preserve the ground in rear, and that between the camp and the advanced posts in case of accidents, as well as that nearest the flanks, these parts being always the safest.

It is therefore right to be careful that the corn between the camp and the advanced posts, does not become damaged by the constant and unnecessary passing of men and horses, or carriages, nor should it be foraged without an express order.

When the army is about to move, this will probably be known beforehand; and in such cases the officers of the *état major* should start the day before if possible, and visit the situation of the new camp, in order to estimate the quantity of grain and green forage, which should be immediately reported to the quarter-master general; and, guided by this report, he will put in orders the number of days' forage, which the army will have to draw from the ground of the encampment, by which is meant the space contained between the camp and the advanced guards. The ground occupied by each regiment belongs to it; but the forage which may be there should be cut before it encamps, by which means the waste is prevented which would otherwise inevitably ensue.

The proximity and strength of the enemy, the nature of the ground, and the amount of disposable troops must determine the distance to which foraging parties may venture from their camp.

Were they to go to considerable distances, the enemy might, while they are engaged in foraging, attack either them, or the camp itself, for the dispersion of the forces will give him the opportunity of so doing.

If, for instance, an army encamped in a plain, were to send out half its cavalry to forage at a distance of several miles, an enterprising enemy might take advantage of this circumstance to attack the camp, and might obtain a considerable advantage before the detached cavalry could return to take a part in the engagement. But when the camp is well entrenched, or situated on heights difficult of access, the cavalry may be sent to forage at great distances without danger.

Precautionary measures should be taken in proportion to the distance the foraging parties may go from the camp; in broken ground there is more to be feared from ambuscades.

If the parties are sent to a valley having but one approach practicable for cavalry, and easily closed, it should most decidedly be occupied by infantry and artillery.

The escorts of foraging parties should, generally speaking, be composed in part of infantry, their numbers being increased in proportion as the ground is less suited for cavalry.

In any case a foraging party should never be sent more than ten miles from the camp: indeed, at this distance the operation will require an entire day, and the cavalry will be much fatigued.

Certain signals should be agreed on for the purpose of recalling the foraging party in the event of the camp being attacked, and also of conveying information to the camp of any serious attack that the enemy may make on the party.

Cannon shots are signals which may occasion mistakes; it is therefore safer to make use of columns of smoke, signal posts, rockets, &c.

With this view an officer and some men should be stationed in the camp, as well as on the ground foraged, to watch with a telescope those places where the signals agreed on are to be made. Signals should, however, not be altogether relied on. In order to convey information of

any thing that may have been observed worth reporting, mounted orderlies should be employed, selected from the best mounted men, and posted at intervals, so as to accelerate the transmission of orders and reports.

History, both ancient and modern, presents so many instances of successful enterprises against troops detached for the purpose of foraging, or against the camp of the army during their absence, that nothing whatever should be neglected which can in any way contribute to the safety of both.

When an attack is to be made on parties employed on a foraging expedition, they should be allowed first to commence operations; then every endeavour must be made to rout the escort before the foragers have time to mount, and go to their assistance. If they can be surprised and attacked in rear by means of one or more ambuscades, it is probable that the greater part of the cavalry may be destroyed, or at least dispersed.

When several of the enemy's parties have been allowed to forage undisturbed, he becomes so confident as often to neglect the precautions necessary for his safety, and is thus exposed to severe checks.

A good stratagem is to pretend to be engaged in foraging at the same time as the enemy, who is thus inspired with still greater confidence in his security, and may be induced to dispense with the usual precautions, when important advantages may be gained.

Circumstances and local considerations will determine whether the attack should be directed against the camp, while the cavalry of the army is foraging at a distance, or against the foraging party.

In either case, in order to ensure success, every thing should be well considered beforehand, and every precaution taken to ensure the attack being made with the utmost celerity.

The following remarks will conclude the directions for the guidance of foraging parties in quest of green forage.

Green forage is generally speaking unwholesome and deficient in nourishment ; it can only be obtained at the expense of a serious loss to the inhabitants, for much is always destroyed even when the best arrangements are made to preserve order, and could this be prevented, there must still be a considerable loss in cutting the corn when green ; so that these expeditions should always be avoided as much as possible, and the corn should more especially be spared until it is ripe.

On Foraging Parties in quest of Dry Forage.

It is necessary to collect dry forage in Autumn before the roads become heavy from the rains, which would greatly augment the difficulties of the transport of provisions from the magazines to the army.

These expeditions entail less loss on the inhabitants of a country than those in quest of green forage, because the parties leave in the barns what they are unable to carry away. They require to be conducted with great care, and there are many details which must be attended to.

In expeditions of this nature, the principal objects which should engage the attention of the officers of the quartermaster general's department are the following : 1st The reconnaissance of all the villages within a certain distance of the camp, which should be carefully searched ; 2nd The amount of forage each village may be called upon to furnish should be determined ; 3rd A general return should be accurately prepared, showing how the villages may be foraged successively, and according to the wants of the troops.

In order to estimate the quantity of forage or straw in any barn, a few of the trusses or sheaves should be weighed, from which a calculation of the contents may easily be made. When officers have repeated this operation in

several barns of different dimensions, they will soon be able to judge pretty accurately of the amount of forage they contain in hay, corn, &c.

To ascertain how many trusses a stack of hay will give, it suffices to know how many are contained in one or more cubic yards, and if the hay is in bundles, and their weight is known, it is easy to find how many will form a truss; for instance,

If a sheaf of rye is supposed to weigh 15lbs, then 20					} will be required to form a truss of 300 lbs.
.	oats	12	
.	barley	12	
.	beans	12	

The contents of the stacks which are often made in the fields may easily be calculated, their base and height being known.

When there is not time to enter the barns for the purpose of estimating their contents, some general information on the subject may be obtained from the inhabitants themselves by ascertaining: 1st What number of beasts they keep during the winter; and 2nd Whether the crops of the district are sufficient, or if articles of consumption are brought from other districts, or whether on the other hand there is any surplus; an approximative estimate may thus be formed, for if a place contains a hundred head of horses, oxen, or cows, and there are a hundred days in the year when these cannot find pasturage in the fields, it is evident that the barns must contain at least, 10,000 rations for their support.

The officers of the "*état major*," when dry forage is wanted, should go to the appointed villages, and endeavour to convince the inhabitants that it is their interest not to render a rigorous search necessary; to avoid which, they should transport to the camp whatever forage may be required of them. If they have not sufficient means of conveyance, the neighbouring villages should be obliged to supply some, and when the latter are foraged they will in turn receive assistance.

Should circumstances, or the nature of the country not admit of these arrangements which are equally advantageous to the country and the troops, they may be in some measure replaced by making the inhabitants carry the forage from their villages to some given spot within reach, where collections may be made and guarded, to be afterwards distributed to the troops.

The strictest measures must be taken to prevent the foragers from entering the villages. Troops should, if necessary, be sent on the day before for this purpose, and they may assist the inhabitants in carrying out their forage, or oblige them to do so, and prevent them from hiding it.

This method has many advantages, but when it cannot be carried out, then the officers of the *état major* must, when making their reconnaissance prepare returns of the amount of forage to be found in the village, street by street.

The men of each regiment will then be told off to a certain number of adjoining houses when they go out on a foraging expedition.

A vidette or sentry taken from the escort furnished by these regiments will be posted in front of the houses, with orders to prevent the foragers from other corps from entering.

By taking these precautions, the officer in command of the party will be better able to preserve order to prevent marauding and those excesses which too often occur in operations of this nature.

With a view to preserving order, each village should be informed beforehand, what amount and description of forage will be required from it.

Then, the different regiments should be told off to their respective villages, and when several are sent to the same, a particular part of the village should be assigned to each.

When a regiment reaches the village to be foraged, it should halt, and a chain of sentries should be placed outside, with orders to allow no one to enter except the foraging

parties led by their officers; these must take care that no larger quantity of forage than was ordered is taken from the village.

Besides these detachments, one or more parties, commanded by officers should patrol the village, to prevent or repress the slightest disorder.

The system of preventing the men from entering the villages, and straying about, must be most rigorously observed when in the vicinity of the enemy. Those detachments which must necessarily be allowed to enter, should run out, and join their corps on the first alarm.

The preservation of good order is so important in foraging parties of every description, that too much care cannot be taken in securing it.

The best method, as has been already remarked is, to make the inhabitants fetch what is required. Each will then carry out to some open space selected in front of the village, his proper proportion of forage, according as he may be rated by the mayor, who should see that the different descriptions of forage are kept separate.

If the inhabitants refuse to do this, and it becomes necessary to bind up the wheat into sheaves, and the hay and straw into bundles, no more men than may be actually required for those purposes, should be allowed to go into the village.

When there are means of transporting the forage on carriages they should be made use of, the horses of the cavalry will thus be less harassed, and a greater amount of forage can be transported with a much smaller number of horses. But when there is any chance of being attacked, it is better to carry the forage on the horses, even when it is necessary to reduce their loads, which in any case should not weigh more than three cwt., or less than two cwt.

In some cases, the different regiments should not keep the forage they may have obtained exclusively for themselves, for one regiment might have much more oats than

it required, while it was without hay, and another might be just in the contrary position; or again, the men might be short of bread, while some of the horses were feeding on wheat.

Foraging parties in quest of dry forage should, as well as those in quest of green, be protected from the attacks of the enemy; but the first require that the escorts should be stronger in infantry than the second, because when occupying villages to be foraged, they will thus be better able to defend the parties from attacks of the enemy.

In a thickly populated country, where the villages are very near each other, a good number may be foraged at once; while it is better if they are some distance apart, to forage at different times than to extend too much the chain covering the foragers, for in such a case the escort might be unable to support and protect it effectually.

In foraging parties of both descriptions, the men should take with them the whole of their arms and equipments, so as to be able in case of attack to join the escort in opposing the enemy.

Each cavalry soldier should be provided with a canvass bag to contain the grain he may be ordered to carry away.

In attacking foraging parties of both descriptions there may be three objects in view, viz., to beat the troops employed, to prevent them from foraging, and lastly, to secure the forage they are collecting.

It is more difficult to succeed in the first object when acting against a party, in quest of dry forage, because the troops always remain united in front of the villages, and also because the chain is less extended, on which account, in attacks of this nature, the proportion of artillery and cavalry should be increased.

The second object, viz., that of preventing a foraging party from carrying on its operations, is easily effected by means of small detachments commanded by skilful officers; but these enterprises seldom lead to any important results.

As to the third object, viz., to secure the enemy's forage, it is sufficient to beat the escort, and drive it beyond the foraging ground.

Under the head of forage may be classed straw for the beds of the troops, and wood for their cooking and watchfires.

Officers should be specially charged to inspect the nearest woods on each side of the camp, and to point out which parts should be cut for fuel. When any stay is to be made, those woods in front of the camp should be cut down first, more especially those parts which impede the outlets, and care should be taken not to touch the wood which is available for beams and other similar uses.

To procure straw for the bedding of the troops, the same means should be used as those laid down for procuring dry forage.

The houses should never be allowed to be unroofed under pretext of a scarcity of straw, for this drives away the inhabitants, prevents cultivation, and may produce a famine, even in a country naturally abundant.

It is of great importance to economize forage of every description, and to prevent waste, as an army may thus be enabled to remain longer in a country, and may avoid the necessity of obtaining the supplies from elsewhere, a measure equally harassing and ruinous.

The officers of the *état major* who are specially charged with the management of operations connected with foraging parties may be assisted in the details by cavalry officers, who are generally better acquainted with this description of service than officers of infantry.

17. *On Winter Quarters and Cantonments.*

IT is necessary, even when the war is being most vigorously carried on, to place the troops in cantonments or winter quarters for a certain period, which is determined by circumstances.

Winter quarters are taken up on the supposition that military operations will be suspended, and that the enemy has neither the intention nor the power of undertaking any thing of importance during the winter season. They are generally taken up at the close of a campaign, when, the weather no longer permitting operations, it becomes necessary to give the troops the means of recruiting themselves after their fatigues.

Cantonments are different from winter quarters, because the troops are more crowded in the former, and do not remain in them so long; they can, moreover, be taken up without interrupting the operations.

They should be taken up as far as possible by divisions, and in order of battle, so that the whole of the troops may be assembled in a few hours on the slightest movement of the enemy; sometimes, also, troops may go into cantonments during a campaign, in consequence of the great heat or of some other circumstance which may render such a measure desirable.

By winter quarters are meant generally speaking, unfortified towns and villages in which troops are distributed in order to be able to repose, and to be better and more easily subsisted, when there is no occasion to employ them either in attack or defence, which considerations must never be lost sight of, and will be explained hereafter.

In establishing winter quarters the general principles to be followed, are to secure as far as possible the safety of

the army, abundance of supplies, and easy communications with the rear, and with the "*places d'armes*."

The army should never be distributed in cantonments or winter quarters until the enemy has taken a similar step, or until it is positively ascertained that he has broken up his force.

The selection of cantonments and winter quarters depends on the number and description of the troops, the number and extent of the places that may be occupied, the fertility of the country, the distance from the enemy, and the nature of the ground he holds.

Quarters situated close together, even when not so abundant in resources, are preferable to those much scattered, because it would be difficult for the troops occupying them to assemble quickly in case of need.

As a general rule the winter quarters of an army should not extend over a space more than thirty or forty miles in length, and fifteen or twenty in depth, so that all the troops may be able to assemble at a central point in one day.

Before they are established, some advantageous position should be selected within reach of the different stations, and suitable as a field of battle; to this the troops should at once repair without delay on receiving orders to that effect.

The quarters should be established on two or three lines, the light infantry and light cavalry in the first line, the infantry in the second, and the heavy cavalry in the third.

The light infantry and light cavalry should be charged with the out-post duty.

A corps of infantry should never be detached without a small proportion of cavalry, nor should cavalry be left without some foot soldiers.

The infantry having less need of protection than the cavalry may be quartered in larger numbers in those places where there is an adequate supply of provisions, and forage sufficient for their small number of horses.

The safety of the quarters is secured :

1st By forming the chain of troops behind a river, or behind mountains or defiles, and by paying attention to having the approaches which should be closed by good posts, more or less fortified ;

2nd By so distributing the troops in the different quarters, that, in a given time, a certain number of battalions, squadrons, and field batteries, may be thrown on a point which the enemy can not reach till after them, and then with inferior forces.

3rd By distributing the troops, as far as the ground will permit, according to the rules established for the order of march and of battle. In this distribution the extent of the ground must be taken into consideration as well as the best mode of disposing the three arms, and the advantageous positions which they may be made to take up in case of need.

4th By having an accurate knowledge of the country, and of the places fit for quarters ; on this depends the selection of the best situation for each description of troops, either with the view to fighting or throwing themselves on one or more points of rendezvous by routes reconnoitred and laid down beforehand.

5th By knowing how to make everywhere the best use of signals, and of orderlies both mounted and on foot for the rapid conveyance of orders and reports.

6th Lastly, by keeping patrols constantly in front of the quarters, which should also be covered by advanced posts, and detachments of light troops on the watch to discover the movements of the enemy, of which in every instance an immediate report should be made.

When the quarters are well selected, the communications should be such as to permit of the troops being thrown with certainty and rapidity on the most important points, whether in front or rear, or to a flank, and in every case that could possibly happen.

These communications should, as far as possible, be under surveillance from the quarters themselves.

It is sometimes desirable to fortify the head of the approaches; but it is always right to consider well the advantages of the different positions, and their relation to one another, as well as the means of passing from one to another with safety and facility.

The amount of subsistence in quarters depends on the fertility of the country where they are situated, and of that behind them; on the magazines which have been formed beforehand; on the facility of communication by land or water, with some rich country: on the judicious economy by which the waste of corn and forage has been prevented; and, lastly, on the certainty of protection and payment, by which the inhabitants are induced to bring their provisions into the quarters. Moreover, it is essential to ascertain as early as possible what the country can really furnish, so as not to expect more than is fair, and to be certain that it can supply the wants of the army while occupying the winter quarters, for these cannot be changed without much fatigue and trouble.

In establishing winter quarters, it is furthermore necessary: 1st To reconnoitre the towns, townships, villages, hamlets, and houses where troops may be accommodated in safety, and which can furnish a certain amount of provisions; 2nd Not to embrace too great an extent of country, so that the troops may be able to assist each other, and to assemble on an appointed field of battle before the enemy can attack them separately; 3rd To reconnoitre carefully, and point out the most suitable places of rendezvous, and to open passages to them when necessary from the different stations; 4th To be accurately acquainted with all the interior and exterior communications such as roads, defiles, rivers, canals, &c., and to secure them by means of troops; by constructing forts, redoubts and retrenchments, so that all posts of the army may communicate easily, not only

with each other, but also with those places whence the provisions and stores of every description are drawn ; 5th If the towns or places selected for the magazines or dépôts are not of themselves sufficiently strong to resist the enemy, any works that may be necessary should be executed, and they should be sufficiently garrisoned to enable them to withstand the most vigorous attacks for a certain number of days.

We will now proceed to develop the foregoing summary.

Preliminary Dispositions and Selection of Winter Quarters.

The selection of winter quarters is generally founded on the reconnaissances which have been made during the campaign ; and as the officers of the Quarter-Master General's department, in their reconnaissances connected with marches, encampments, foraging excursion, &c., have had frequent opportunities of ascertaining the extent, strength, position, population, and resources of the towns, villages, and other places visited by them, and of procuring similar information respecting those they have not visited, these officers must have been able to collect the necessary data for the establishment of cantonments and winter quarters, even in countries which would appear unsuitable for that purpose.

When winter quarters are to be taken up, the Quarter-Master General gives his officers a general idea of what is required, from which they will prepare and send in : 1st A project of winter quarters, starting from a position given as a central point ; 2nd An accurate plan of the villages and hamlets within a circle of five or six

leagues; 3rd A detailed return of the number and description of troops they are capable of containing with ease, and also when crowded; 4th A return of places where stabling or barns may be found for a given number of horses; 5th An itinerary giving the precise distances between the different villages; and, lastly, they must designate some principal position which would serve as a point of rendezvous for the whole army, or for its different parts in the event of the enemy making offensive movements.

These officers, should moreover, give accurate details respecting the communications from each village to the places in its neighbourhood, notes on the nature of the roads, and on the best mode of assembling the troops at the rendezvous appointed by the general commanding, in the shortest possible time, and without crossing each other on the march.

As the officers of the Quarter-Master General's staff are specially charged with the posting and movements of the troops, whether with the view of throwing them on any given outlet, or of spreading or closing them up, or changing their quarters, they are doubly interested in having accurate data on which to work; they cannot, therefore, be too particular in giving accurate details on the establishment of the winter quarters which the army is supposed to take up.

It is for this reason that these officers should first prepare a general return of quarters, showing at one view the numbers and situation of the troops, &c.

Even when the quarters are covered by a river, or by defiles, they should nevertheless be told off, in divisions according to the numbers of the troops, and should correspond as far as possible to the natural divisions arising from the organizations of the army, such as *corps d'armée*, divisions, brigades, regiments, battalions, squadrons, &c.

The general officers should remain with the corps which they command; and the officer of highest rank should fix

his head quarters in the principal station in his division, which should be selected on one of the main outlets. Each division should be subdivided into districts.

The following considerations should determine the posting of the troops in the towns, villages, and other inhabited places: 1st The situation of these places, whether in the cultivated parts, or at the head of some defiles, or on rivers considered as lines of defence, or as a means of facilitating the arrival of supplies; 2nd The number of houses which these places contain; 3rd The governments to which they belong, for they may be neutral, or should perhaps be respected from other motives.

The staff officers should also prepare a topographical plan of the quarters, in which the stations should be marked, as well as the number and description of troops occupying them; the divisions and districts to which they belong; the distances between the different points of the quarters; the main roads, and the other communications.

A plan of the country, drawn by the officers who have surveyed it, should show, without confusion, all these necessary details, to which should be added the names of the places, and of the territorial divisions; the number of houses should also be given in figures.

To ensure uniformity in this plan, the officers should all work on the same scale, that for instance of a ten-thousandth.

Moreover, descriptive notes annexed to the plan of the country, should give a number of details which cannot otherwise be shown, and should mention with accuracy the divisions and districts, when this arrangement is observed in taking up quarters.

The number of troops, more especially of cavalry which can be quartered in a *division* and the length of their stay will depend much on the fertility of the country; for this reason it should be shown in the column of observations, whether the country abounds in grain, corn, straw, hay,

and oats, the average annual crops should be inserted opposite each place.

Those villages where the houses are scattered should be noted, as well as the principal industry and commerce of the inhabitants when of sufficient importance to deserve mention, and when they have some relation to the wants of the army.

The staff officers whose duty it is to conduct the troops to their quarters, should give information on the state and direction of the roads which serve as communications between them, as well as of those leading to the rendezvous both of the army, and of the division and brigade to which each corps belongs.

They should ascertain whether in the event of hurried and simultaneous movements, it would not be possible to open new communications by which the mass of the troops might be enabled to reach the same points more rapidly : the advantages that might result from this in a case of urgency cannot be over estimated.

In the topographical plan before-mentioned it is indispensable to show distinctly the nature of the roads ; those, for instance, too narrow for carriages should be indicated by a single line ; and those sufficiently wide by a double line, having the words "good" or "bad" written above them according to their quality ; but in the descriptive notes, the nature of any necessary repairs should be mentioned, as well as the requisite time and the expense of making them, calculated on the number of hands to be employed.

The bridges should be shown on the plan, especially those across the principal rivers, and it should be carefully specified whether they are of stone or wood, and in what state they may be.

It is equally necessary to note what other means are to be found on the spot, which may be made use of to traverse rivers, streams, or streamlets, such as bridges of boats,

pontoons, flying bridges, ferry boats, rafts, row boats, and others of every description.

When there are fords they must be described.

As soon as the work relating to the arrangements of the quarters is completed, the mode of moving the troops into them must be taken into consideration.

The operation of breaking up a camp occupied by a numerous army, and of distributing the troops simultaneously in their winter quarters is one of much difficulty, requiring great care in all its details, in the precautions for the safety of the army during its march, and the well being of the troops; while every thing should, as far as possible, be made to harmonize with the interests of the inhabitants; it is only by taking wise precautions beforehand that the inconveniences and disorders likely to happen in such an operation can be avoided.

Before breaking up an army with a view to sending it into winter quarters, it should be ascertained: 1st Whether the number of roads leading from the camp is sufficient to ensure the subsistence of the troops during the whole time required for the move; 2nd Whether this time will be short enough to enable the troops to avoid the severity of the winter, and to save them from undergoing fresh fatigues; 3rd Whether the roads are sufficiently numerous to enable the different columns to move without meeting at the same passes; 4th Whether the inhabited places will suffice to lodge the troops who may thus be spared the hardship of encamping.

Detailed information of every description, respecting the country to be traversed cannot be procured too early: those officers of the "*état major*" who are most capable of executing this duty should be selected, and precise instructions should be given them on the subject of the constructions of bridges where necessary, and also of the repairs of roads.

Those officers to whom the Quarter-Master General makes known his intentions should be accompanied by detach-

ments who will collect some of the inhabitants best acquainted with the country, and best able to give circumstantial details on the nature and situation of the high roads, lanes, paths, and communications of every description.

The Quarter-Master General will then determine what number of troops can march at one time, and the places where they should halt; the route should be prepared, and a copy sent to the commissary general, with the amount of the requisitions of every description, so that this officer may take effectual measures to ensure the supply of bread, meat, fuel, and forage at the places specified.

As to the supply of bread, as this requires a great number of ovens and other arrangements, which cannot be very quickly made, the officers who reconnoitre the state of the roads should be accompanied by some of the commissariat staff, who will take preliminary measures with a view to carrying on the different branches of the service in their department.

When the troops cannot be quartered on the inhabitants on their way to their winter quarters, the foregoing directions must still be attended to, with this difference, that at each station the officers charged with the direction of the columns should reconnoitre beforehand some convenient encamping ground for the troops, being careful to ensure a supply of water, which is more easily procured for infantry than cavalry; they must also cause the fuel, straw, provisions, and everything that should be prepared beforehand, to be collected on the ground chosen; but encamping will be necessary only until the troops reach the point where they separate to take up their different quarters, after which they will generally be able to find accommodation.

Of Cantonments.

Whether an army is in cantonments or winter quarters, it can never get under arms as quickly as if it were encamped; and for this reason different dispositions from those laid down for the safety of camps are necessary.

When an army is encamped, its advanced posts are all in communication with each other, and can assist each other promptly; by the resistance they oppose to the enemy, the army is enabled to stand to its arms and prepare for action; but in cantonments, and still more, in winter quarters, being scattered over a considerable extent of ground it cannot be surrounded by a connected chain of out-posts capable of offering a vigorous resistance.

In winter quarters, the separate posts should be considered as independent, and must be so established as to be capable of defending themselves without assistance, their communications being no longer kept up by a continuous line of videttes, and three lines of posts, but by patrols only.

It must be borne in mind that the objects in view in placing an army in winter quarters apply equally to the troops entrusted with the out-post duty. They should be lodged, and not exposed night and day to the weather, as when the army is encamped, otherwise they would soon be unfit for work.

Cantonments are properly speaking the preliminary dispositions which an army makes before going into winter quarters, or for the purpose of evacuating them. In the first case the army is dispersed into villages and other places capable of sheltering them from those early inclemencies of the season which oblige them to quit the field, whence they take up quarters still more scattered; and, in the second case, the different posts are drawn closer together to take advantage of the return of spring previous to reassembling and encamping.

The cavalry is generally first sent into cantonments, for the horses would soon be out of condition for work were they exposed to bad weather, and to the evils arising from damp and muddy ground.

The cavalry should occupy those villages nearest the rear of the infantry which is still encamped, so as to be ready to act on the first alarm, and to furnish their detail for the grand guards, detachments, and patrols, as before.

In this case the infantry camp should be so placed as to be in a measure unapproachable, and should be, moreover, well entrenched, that the enemy may be deterred from attacking it, and that, in the event of his doing so, the cavalry may, if necessary, have time to come up and take a part in the action.

The infantry should not be placed in cantonments, until it has been positively ascertained that the enemy is about to take a similar step, and that no enterprise is to be feared on his part.

This point being ascertained, as also that it is not a feint, the cavalry may gradually occupy other villages more distant and towards the wings, whilst the infantry will successively occupy those in the neighbourhood, and the whole of the troops will thus be soon under cover.

Should the enemy be so near as to render it possible for him to reach the camp in one march, the artillery should remain in it, and the corps should send picquets for its protection, being careful to relieve them every twenty-four hours.

The videttes will remain in front of the camp, and the duty should be carried on as if the army was still in the tents, which should remain pitched: the troops should be so disposed in their cantonments, and the roads rendered so practicable, that the different corps may, at the slightest alarm, quickly re-occupy their former ground in order of battle.

The general officers should be with their respective brigades and divisions, and the troops must be under arms two hours before daylight, and not leave them until the scouts have come in.

The cantonments sometimes cover the winter quarters, but in this case they must not be too extensive, nor must the army be broken up till the enemy has done so, especially when the operation can be deferred; but if not, the enemy should be ascertained to be at such a distance, as to render it impossible for him to fall on the quarters before the troops have had time to assemble and occupy the field of battle.

Should the enemy be already in his cantonments, their arrangement should be ascertained, and the time necessary for assembling his troops calculated.

The facilities or difficulties of approaching him should also be taken into consideration, as well as the nature of the intervening country, and of its rivers, streams, roads, defiles, or other impediments; so that, should the adversary be negligent, unskilful, or wanting in circumspection, a perfect acquaintance with the localities may allow of a surprise being attempted with every chance of success.

With this view, in order the better to deceive the enemy, a feint should be made of breaking up the army, and, when it is evident that he is taken in by the movements made, the troops may be brought to the general rendezvous by well concerted marches. If prudent measures of this description are well executed, the result may decide the fate of the campaign.

While the army is in cantonments, every necessary arrangement that circumstances require should be made to establish the Winter quarters in the most advantageous manner possible.

Disposition and Defence of Winter Quarters.

The first rule to be observed in the disposition of Winter quarters, is, to select the stations so that the troops may be quickly assembled. They may be more or less scattered, according to the extent of ground covered by the stations of the enemy, and to their distance.

The time requisite for assembling the troops should be considerably less than that which the enemy would require to attack or surprise them.

The safety of the army and the abundance of provisions are two principal points, which must always be taken into consideration in the establishment of Winter quarters; nor can these be considered good unless the above points are, to a certain degree, secured. The question of subsistence may admit of modifications, but that of safety never.

In order to ensure greater safety, the quality and quantity of the subsistence to be found in or near the quarters may, and ought, indeed, to be sacrificed, if necessary; but the safety of the army should never be compromised on any consideration.

Although, as a general rule, the smallest extent of quarters should be combined with the greatest facility of obtaining subsistence, there are cases where there is so little danger to be apprehended from the enemy, that these precautions may be relaxed in order to give the troops better quarters; but these cases are rare, and, being exceptions to the general rule, can only be sanctioned when there are good reasons for so doing, and when the enemy is positively incapable of attempting any defensive movement.

Moreover, the selection of the quarters should depend on the plan of operations to be pursued subsequently, on the designs that may be imputed to the enemy, and on whatever might possibly occur, either during the Winter,

or on the opening of the campaign; and as it is easy to foresee in what country the quarters will be taken up, all available resources should be secured beforehand.

Winter quarters are taken up in one's own country or in that of the enemy, according to the success of the campaign.

Those taken up in the enemy's country should, if isolated, be as much as possible in enclosed positions, and be capable of resisting an attack until succoured by the troops from the neighbouring quarters.

It is incontestably a great advantage to be able to take up Winter quarters in the enemy's country, when this has not been ruined or devastated; besides abundance of provisions, the army should be able to find the necessary security; the communications with the frontiers, with the conquered places, and the principal magazines should be neither difficult nor dangerous; and resources of the country in provisions, forage, means of transport, &c., should be available.

It must also be remembered, that more precautions are requisite in the enemy's country; the guards must be increased, and the scouts and spies multiplied; for not only must those movements of the enemy, which might endanger the quarters, be watched, but also the proceedings of the inhabitants in the different stations, as well as in the unoccupied places.

When, for instance, there are several of the enemy's strongholds within reach, the quarters are exposed to the frequent alarms which their garrisons may occasion, especially when these are numerous, and a considerable portion of the army would have to be always on the alert, to furnish the necessary detachments and out-posts: these fatigues weaken the corps, and prevent them from recruiting their strength.

From this it may be easily seen, that Wintering in the enemy's country is not without its inconveniences; but, notwithstanding, when it can be done with safety, the advantages are, on the whole, incomparably in its favor.

When the Winter quarters must be taken up in one's own country, care should be taken to let them cover, 1st The weakest and most exposed part of the frontier; 2nd The magazines and depôts; 3rd Those parts of the country into which the enemy might otherwise make incursions during Winter, either to levy contributions, or to attempt some other *coup de main*.

But, wherever the quarters may be situated, the first thing to be done is to establish posts covering them.

These posts should be themselves covered, either by rivers, mountains, or defiles difficult of access, or fortified places, or by other well selected posts, which should be carefully retrenched.

When acting in a country abounding in water communications, the command of the sources should be obtained, and the enemy must be prevented from making use of them. By means of dykes, sluices, batardeaux, and other contrivances, the water may be most usefully employed in the defence of quarters.

These advantages, however, are not without some drawbacks: 1st The rivers may be traversed by swimming, or by means of boats, and may, moreover, be frozen over at certain seasons; 2nd Nearly all mountains have gorges and openings, of which an enemy may avail himself; 3rd The strongest places, the best positions may be turned.

These defences must not, then, be entirely trusted to, nor those other precautions neglected on which the safety of the quarters depends. These consist in establishing posts, which may be considered as the advanced posts of the army in Winter quarters: when their positions are well chosen, the enemy must make himself master of them before he can undertake any important operation against the quarters in their rear; but they should be capable of arresting his progress until the troops in the quarters, or the whole army, can unite to frustrate his objects.

In selecting the positions of these posts, the following

points should be kept in view: 1st They should be able to communicate and afford each other mutual assistance; 2nd Their guards should be placed in such positions as will best prevent the necessity of employing a great number of men; 3rd They should keep parties and patrols constantly on the move, so as to discover and observe every thing which may approach the quarters; 4th The passages leading to the flanks must be guarded by detachments; 5th Reserves must be posted all along the chain; 6th Some of the roads may be rendered impracticable; 7th Large abattis may be constructed in appropriate places; 8th Scouts must be constantly out and on the alert; 9th Every measure must be taken which is calculated to secure the quarters from the enemy's attacks, as well as from alarms which would harass the troops.

When, from circumstances, the Winter quarters cover a considerable extent of ground, this inconvenience, sometimes unavoidable, must be counterbalanced by turning the position to the best advantage in other respects. This position should be such, as to prevent the enemy from daring to attack it for fear of his communications being cut off during his advance.

Officers in command of the out-posts should have patrols constantly out, obtaining information of the slightest movements of the enemy, which must be at once reported, as well as every thing else they can ascertain concerning him. They should also endeavour to learn the proceedings of the enemy from the inhabitants; from the carters bringing goods from the country he occupies; from the smugglers, the commercial travellers, and hawkers: by means of correspondence, which may sometimes be obtained from the enemy's camp; and, lastly, from spies of every description who can effect an entrance there.

All the posts should be retrenched and supported, and should have their communications with the army perfectly free, so as to ensure their safe retreat in case of need.

The most important points, and those most susceptible

of defence, should be provided with artillery, which, in case of attack, should be used for making signals to the supports, either to advance as quickly as possible, or to be on their guard.

Smaller posts, and those which, from defects in their position, could not be held, should fall back on the approach of the enemy, by roads leading to other posts, or to the nearest stations, taking care not to expose their retreat to be cut off.

The disposition of the stations should be made with reference to the order in which an army encamps, as far at least as the extent and nature of the country, and the distances will permit.

Thus, the troops of the right wing should occupy the stations on the right, and those of the left wing the stations on the left, and in the same order with regard to the first or second line as they would occupy in order of battle; the generals of divisions must be with their divisions, those of brigade with their brigades: a certain proportion must always be observed between the extent of front and the depth of the general disposition of the stations.

The greater the depth the less front will they require; and this disposition is attended with the advantage of requiring but a small number of men for the fatiguing service of the out-posts.

But it is not always that great depth can be given, for it is sometimes necessary to cover a certain extent of country, or to keep up communications with detached corps, which may render it requisite to extend the front at the expense of the depth.

Besides these considerations, the disposition of the quarters is often influenced by the nature of the population of the country, and the feelings of the inhabitants.

It appears, then, that no invariable rules can be laid down for the depth and extent of front of Winter quarters, but experience shows that it is advisable, as a general

rule, not to let the depth be less than one half of the front; if the extent of front occupied by the quarters of an army is forty miles, the depth should be twenty.

The advantage of this disposition is, that the troops may be quickly assembled and have nothing to fear from the enemy; on the contrary, should his quarters be more scattered, expeditions against them may be undertaken, especially when the nature of the country is in favor of so doing.

When circumstances render it necessary to cover an extent of country, much more considerable than that alluded to, it is better to have strong detachments capable of defending themselves, than to extend too much the front of the line of quarters, not only because this would be too weak, but also because the army would be unable to unite quickly and in large bodies.

In determining the front of a position to be occupied by an army during the Winter, the nature of the ground, and of the roads leading to the position, must be well considered.

There are but few communications leading across high mountains or large rivers; and in such cases it is easy to close them by posts, sufficiently strong to oblige the enemy to make himself master of them before he can attack the quarters in their rear; again, in a broken country, it is sufficient to guard the roads with strong detachments, to prevent the enemy's artillery from advancing.

But it is not enough to secure the safety of the front of the position covering the quarters, the flanks must be also well covered and protected, either by inaccessible mountains, by considerable rivers, or by fortified places. In default of these, they must be secured by throwing back the extremities of the line of the position. Besides these precautions, the rear must be secured against surprises, and the attempts of partizan corps.

Care must be taken that the safety of the quarters be

not endangered by false points of appui. It has been already remarked, that too much confidence must not be placed in rivers, for the reasons that were given; some rivers, at certain seasons form extensive arms, but the protection they afford is not permanent, for when the water falls, these arms are left dry, and no longer present the impediment which the troops relied on.

The different descriptions of arms should have the same relative position in quarters as they would have in camps and in the order of battle, or wherever their mutual support is practicable and necessary.

When the quarters of the cavalry are exposed to attack, some infantry should be stationed with them; and in the stations on the flanks there should be troops of all arms.

Should the Winter quarters be established in a mountainous country, the heavy cavalry may be dispensed with, as it would find difficulty in moving, and in obtaining subsistence; with every precaution the supply of forage might fail; that arm should, therefore, be sent to the rear, in some safe and convenient part of the country.

In such cases, it is sufficient to keep a small number of light cavalry for the service of the detachments, and to act as orderlies.

But when the cavalry cannot be sent back, and must remain in the mountains, it should be stationed in the rear, in those places least exposed to the enemy, in the most open part of the country, and where there is most forage to be found; infantry must be stationed with it, to aid in the defence of the quarters, for cavalry is but ill calculated to defend entrenchments, walls, and enclosures, and can only assist the infantry by means of its advanced guards, videttes and detachments, being able to act only in open spaces.

When a station occupied by infantry and cavalry is attacked, the infantry should look to the defence, whilst the cavalry, judging its time, sallies forth by outlets previously selected, and charges the enemy.

The number of troops to be quartered in the different towns and villages depends less on the extent and resources of the places, than on their position; and it is in this that Winter quarters differ from those occupied in times of peace, when the principal object is to procure the greatest amount of supplies and comforts, both for men and horses; but in war, those places must be preferred as Winter quarters which offer good positions, on which the safety of the quarters depend: such are places covered by ravines, defiles, and other narrow passes easily defended.

The commanding officer of each station should fortify his post as well as he can, making the most of the ground, so that, in case of need, the troops occupying it may be able to offer a vigorous resistance to the enemy.

But it often happens, that places selected for Winter quarters cannot be fortified, either from their situation or construction.

In such cases, the officers commanding should, under the direction of the officers of engineers, or of the *état major général*, cause the troops to construct some works, closed and provided with blockhouses, in well selected positions.

These works, in which the baggage and artillery should always be kept, under the protection of detachments capable of defending them, must not be more than six or seven hundred yards from the place where the mass of the troops are quartered, so that they may be reached without delay.

Should there be in the station any detached buildings, capable of being put in a state of defence, they should be selected in preference to making fresh constructions, by which labour will be saved, and the buildings should be rendered defensible, according to the rules of field fortification.

Those which might be easily set on fire should be avoided, and also those which would be useless in pre-

venting any subsequent operations on the part of the enemy; such, for instance, as castles or other edifices, placed on impracticable heights, and which would be of no use with reference to the communications.

A fortified building should never contain more troops than are required for its defence.

Should the number be too great, some works ought to be constructed outside, or else several defensible buildings should be occupied, and in default of these, entrenchments may be thrown up and the surplus troops placed there.

Cemeteries situated in the villages, or outside of them, are generally easily entrenched. They are, for the most part, surrounded with walls, and the approaches are generally open.

When a body of troops of any description is quartered in a village, some central point should be fortified and occupied, the approaches of the village should be barricaded, and every disposition made for a vigorous resistance.

Although the troops wintering in villages may be sometimes under the necessity of throwing up exterior works, it is not so with those in towns, where the means of defence may be found in the place itself, and the more easily as towns are generally surrounded by walls, flanked, to a certain extent, and stone buildings can almost always be found, which may be converted into redoubts, and could not be easily set on fire.

When it would be of importance to the enemy to gain possession of any towns or villages situated on the line of the Winter quarters, greater care must be taken to fortify and protect them.

Those positions should be the strongest (or means should be taken to strengthen them) which are most exposed to attacks of the enemy in force, and more especially those whose loss from unforeseen attacks would lay open important approaches, and endanger the safety of the army.

It is often necessary to occupy, with strong detachments,

passes at a distance from any habitations; in these cases, stockades should be thrown up, having blockhouses within them, sufficiently spacious to contain the detachments charged with their defence; care must be taken to relieve these detachments at least every four days.

In the disposition of Winter quarters, the infantry should be placed in the first line, and the cavalry in the second, because the former can be under arms sooner than the latter, and, moreover, infantry can make head against superior forces for a longer time; again, they can be quartered closer and in greater numbers than the cavalry, on account of the shelter required for the horses of the latter.

Nevertheless, there should be some small cavalry detachments in front of the first line to patrol towards the enemy, give notice of his approach, &c.

1st These detachments must consider themselves as advanced posts although the enemy may be several leagues from them; 2nd They must never feed all their horses at the same time, nor allow them all to be unsaddled at once; 3rd The horses should all be in large barns, one half of the men being always ready to mount, and the remainder should not be far off by day, and still less by night, when all should be fully accoutred, and have their horses bridled and saddled; 4th Videttes must be posted so that the enemy cannot approach without being perceived; 5th Patrols should keep up a constant communication with the posts in their neighbourhood, acting in concert with the infantry in their rear. These detachments of cavalry, as well as those at the out-posts should be relieved every four days.

In every station occupied by infantry, a detachment of cavalry should be quartered with them to act as orderlies.

The infantry should provide for the safety of the stations it may occupy, not trusting to the vigilance of the advanced posts.

It has been already said that the first duty of the infantry in occupying a station is to fortify it; but this would be useless unless attention is given to those precautions which alone are calculated to frustrate any attempts of the enemy to gain possession of the station, either by surprise or by main force.

These precautions are as follows: 1st Frequent patrols, which should be made from each station to its front, and to its flanks half-way to the stations on each side; 2nd The commanding officers must not permit the slightest negligence in the mode of conducting the rounds, patrols, or any other branch of the service; 3rd The patrols should have a countersign sent to them along with their orders from the "*état major général*;" 4th During the day sentries should be thrown out in elevated positions, whence they may see everything that approaches the station; 5th Should the country be wooded and the sentries be unable during the night to observe all the approaches, some posts must be established outside, and in the fortified part a detachment must be always on the alert sufficiently strong to withstand the enemy until the troops not on duty can get under arms, and run to the defence of the point attacked.

When an attack is expected, the troops should be kept together during the night in barns or houses, where they may repose with their arms by their side, even when the defence is to be made outside; and sentries should be placed at the doors to rouse the troops on the first alarm.

The detachment guarding the entrenchments should close all the approaches so as in case of surprise to be able to throw itself into the redoubt, and defend it until the troops of the station can come to its assistance.

Although each station may be capable of defending itself, those in the second line should not abandon those in the first to their own resources; they should, on the contrary, send troops to their assistance, as should also those in the first line who have no reason to fear an attack.

Those stations established at the natural passes, and at the head of defiles, being more carefully fortified than the others, do not require such prompt assistance.

It should, however, be observed that, were the troops in the stations nearest to those attacked to march out to their aid at the first musket shot, without reflection and without precaution, they would be exposed to ambuscades, or might miss the point of the enemy's real attack.

It is, therefore, of great importance to know where the assistance is really wanted, as well as the number and description of troops necessary; with this view, the following measures should be taken.

As soon as the advance and attack of the enemy is made known by means of reports, by firing, or preconcerted signals, the troops stationed nearest the point attacked should immediately prepare to go there; the fortified points should be occupied by a portion of the infantry and artillery, whilst the remainder with the cavalry repair to the place selected as the rendezvous of several of the stations.

These rendezvous should be fixed between the first and second lines, and within a league of the first.

Although it is not usual to fortify the stations in rear of the position covering the army, it is advisable to retrench a well selected position behind which the army may be drawn up to receive and fight the enemy.

The troops should be able to reach the place of rendezvous from their different stations in less than one hour, unless there are good reasons for deviating from this rule. The points of reunion for the infantry should be near the centre of a circle of which the radius does not exceed a league, and for the cavalry two leagues, which they can traverse in an hour in case of need.

Whilst the troops are repairing to the rendezvous, the projects of the enemy may be more accurately ascertained; as well as the actual point attacked, the strength and description of the enemy's force, and the best mode of frustrating his attempts.

Should the troops on reaching the rendezvous find themselves too weak to oppose the enemy, the forces from different rendezvous must be united, until a sufficient body has been collected, when he must be attacked without hesitation.

The communications between the different stations should be easy, and not liable to be interrupted by accidental causes, nor to be cut off by the enemy; this might happen unless precautions were taken to guard the defiles, gorges, and roads, on the front as well as the flanks and rear. The commandant at each station should have distinct and positive orders respecting the place he is to repair to in case of alarm.

As long as the enemy does not surround a station, the commandant may make known his situation by means of mounted orderlies; but when he is completely surrounded recourse must be had to signals.

For this purpose a signal staff should be fixed in each station on some commanding point, and the different signals to be employed should be agreed on beforehand with the other stations; for instance, when any station is attacked those should be signaled which ought to come to their assistance; signals, by means of fires, should not be used unless there is no other mode of making known the necessity of sending immediate aid.

Every station should answer the signals to show that they have been seen. It is also necessary to establish relays of orderlies for the transmission of intelligence between the different stations, to confirm what the signals have announced, or to make known any that may not have been perceived or understood.

Besides the general signals, some should be especially agreed on for particular stations, others for the stations of the centre, or towards the right or left.

Too much confidence should not be placed in signals made by rockets. The best night signals are cotton lanterns or tarred wicks, fixed on a pole; and in the day time,

signals should be made by cannon shot, or by means of columns of smoke which are easily obtained by setting fire to any damp rubbish. In some cases, more particularly in mountainous countries, lanterns of different colors may be used with advantage.

As it is difficult to judge from a distance from which station signals by fire (night signals) are made, and as it is of the utmost importance that the corps going to give assistance, should know accurately the direction to be followed, precautions should be taken to avoid any mistake.

For this purpose, a horizontal table should be fixed on some spot whence all the stations can be seen, and on this should be traced lines corresponding with the directions of the signal stations, these must be observed by day with telescopes, and by night the ray from the signal station will be reflected on the table, and by looking along it the direction will be ascertained.

This precaution being easily managed should be adopted in every station when its position will admit of so doing.

However well the mounted orderlies may perform their duties, notices may always be transmitted more quickly by means of signals.

The signals should be seen from all the stations, and should make known when and in which position the army is to assemble.

At each signal station one or two sentries should be posted, to look out for signals from the other stations, and to prevent any from being made without orders, or accidentally.

Besides the signal for an alarm which should be established in each station there should be another for the grand rendezvous and general assembly.

Notwithstanding the arrangements for signals, orders and reports should be sent by orderlies, for bad weather or the negligence of those employed at the signal station may interrupt the communications.

But the new telegraph for the use of armies is preferable to any other mode of making signals; by different combinations every thing necessary may be communicated by night as well as by day; experiments lately made have shown the advantages to be derived from its use.

In every station advantage must be taken of the towers, belfries, and highest points, as posts for sentries. Their attention must be constantly directed to every thing approaching the place. Should any troops be perceived, immediate notice must be given, and the preconcerted signals made to alarm the nearest stations; these, in their turn, give the alarm to those more distant, so that all are thus enabled to get under their arms at once; and the troops which are to assist the station attacked are ready to march as soon as the orders reach them.

The selection of the place of rendezvous for the troops in case of action is a very essential point.

The ground for this purpose may be selected about the centre of the quarters or to their front or flanks, or even to their rear, the troops falling back in succession on advantageous positions. The choice must be made after taking into consideration the situation, the nature of the surrounding country, the distance and position of the enemy, and other circumstances depending on the local features and the proposed plan.

A central position is, however, to be preferred when it has the requisite qualifications, unless the advantages of some other are very considerable. The troops may be more quickly united, the different lines to be traversed being shorter, whilst the line the enemy has to follow is much longer, and the amount of obstacles he will have to encounter will depend on the road he is obliged to take in order to reach the position. In such cases, when the great object is to avoid surprises, and to be beforehand with the enemy, however active he may be, every thing depends on accuracy in estimating time and distances.

Should the enemy for instance fall on some of the

stations before the troops are assembled, the calculations must have been defective, or may perhaps not have been made at all.

In making these calculations the enemy must be always supposed to move with the greatest possible celerity; and it is safer to give him credit for meeting with fewer obstacles than will really be the case: in calculating one's own movements, the contrary plan should be adopted.

The roads leading from each station to the place of rendezvous should be clear, the defiles open, and the rivers or streams bridged across.

Each corps should know the position to be occupied in the order of battle, and the shortest mode of reaching it.

The general rendezvous must be carefully reconnoitred, and accurately determined, its extent being marked out by fixed and easily distinguished points; the instructions and orders relating to it must be very clear and decided, so as to prevent all mistakes and leave nothing to chance.

The general dépôt of provisions and stores, as well as the artillery park, should also, when possible, be a fortified place in some central position; it is, at all events, indispensable that the place selected as a "*place d'armes*" should be protected by earthworks, well strengthened with palisades and *chevaux de frise*.

It is also advantageous to have some good redoubts towards the flanks, between the "*places d'armes*" and the most distant stations: these, placed at favourable and intermediate points, serve as points of "*appui*" in case of necessity; for the flank stations, if obliged to fall back on these redoubts, will soon find themselves in safety: and the enemy being arrested by these obstacles, troops from the other stations would have time to come to their assistance, and cover their retreat or drive back the assailants.

It may sometimes happen that the quarters of the army are necessarily close to those of the advanced posts; the inconvenience attending this must be remedied by making such dispositions suited to the local features of the country

as will prevent the enemy from making himself master of the principal station on the same day on which he attacks the first line.

If the troops move up to support the first line every time it is attacked, they will, it is true, be fatigued and deprived of that repose which is so desirable; nevertheless, such a measure is indispensable: the points of rendezvous for the troops should therefore be towards the front, so that they may assemble easily, and still be advancing. These points would also be useful in case of making an attack.

But should the enemy advance with very superior numbers, and carry the position by main force, it would be a great mistake to send forward a part only of the army, which the enemy would thus be enabled to defeat in detail.

In such a case, it would be best to retire and assemble the whole force in some advantageous position, there to await the enemy; so that an army should have a place of rendezvous selected for each station, in front as well as in rear of the line it occupies.

It is more especially when opposed to an enterprising enemy, that the winter quarters of an army are exposed to alarms, and to false or real attacks. By vigilance, order, and the correct performance of all duties, as well as by observing the precautions above indicated, his intentions may be frustrated; indeed, by means of well considered dispositions, the enemy may himself be made to fall into the snares he has laid; and finding himself always vigorously opposed, he will soon be tired of constantly attacking the quarters.

Surprises need not be feared when the positions are well selected, and well fortified, and when the measures for ensuring the safety of the stations have not been neglected; nevertheless, to prevent accidents, information respecting the slightest move on the part of the enemy should be procured by means of spies, and then he should be allowed

to advance to the attack of the quarters, when he will find his endeavours frustrated.

Should the parties sent out in front of the line to observe the movements of the enemy, be repulsed and obliged to fall back on the advanced posts, or on the line of the quarters, some strong detachments must be sent forward to support them, and to reconnoitre the enemy more closely.

A detachment for this purpose should be formed in two parts: the first, composed of light troops, advances, protected and supported at a certain distance by the second, which ought never to go too far from the army. It is understood that, as this detachment is merely intended to ascertain accurately the nature and amount of the enemy's forces, and his dispositions, it should be careful not to do more than retard his advance without compromising itself.

As the subsistence of the troops is not less important than their safety, the officers of the Quarter-Master General's department should be able to make returns of the resources of the country, of every description, in a military point of view, more especially when the army is in cantonments or winter quarters.

The order and discipline which the troops have observed throughout the campaign, will influence their subsistence during the winter, for when the farmers have been allowed to cultivate their fields, and get in their harvest, they will be able to furnish provisions both for men and horses. Pillage and waste during a campaign, and all violent and vexatious treatment of the agriculturists, are to be avoided, not only because it is wrong, but also because it is most prejudicial to the interests of those guilty of such disorders.

In order to insure the subsistence of an army, the following directions should be borne in mind: 1st Measures to form magazines and dépôts must be taken in time; 2nd Both must be established in places not easily accessible, and safe from any attempts of the enemy; 3rd Small magazines must be established on points which will

facilitate the distributions, and more particularly on those most convenient with respect to the issues of bread and forage; 4th The surrounding villages should be obliged to send to the army all necessary articles, which must be paid for at the regulated prices; 5th The butchers of the towns or other places, should be enabled to obtain supplies of meat; in short, the most judicious arrangements should be made for the issues of the commissariat department, so that provisions may be obtained in all parts in abundance.

The amount of forage in the towns, villages, and other places covered or protected by the quarters, should be accurately ascertained, and guards placed there to prevent any corps from foraging, except those told off for that purpose.

Although there is not much danger to be apprehended by such foraging parties, they should, nevertheless, be conducted in regular order, and with proportionate escorts.

The forage obtained in distant places, out of the protection of the quarters, and exposed to the attacks of the enemy, should be at once carried off to the depôts of provisions.

However abundant the provisions may be, as large a quantity as possible should be drawn from the enemy's country, so as to diminish his supplies and spare one's own.

An enemy's country is in a different position from one's own, where every thing is conducted by rule. It must be well understood that if a country is ravaged or overcharged with contributions, whether in kind or in money, it will soon be deserted by its inhabitants, and will no longer be able to furnish any thing. For this reason, the requisitions for grain, forage, and utensils should be made with discretion according to the capabilities of each district, and the same discretion should be used in levying contributions of money, or of any thing extra for the use of the troops.

The consumption should be calculated on the presumed time of occupation of the winter quarters, and of the

cantonments which the troops will go into before opening the campaign. From these calculations, the different issues will be regulated; all waste, plunder, injustice, fraud, and malversation being carefully prevented.

During the occupation of Winter quarters, troops are reposing, but should not be in a state of total inaction; whilst recovering from their fatigues, they must be recruited and put in a condition to recommence the war with advantage, and carry it on with vigour.

Enough has been said on the subject of cantonments and Winter quarters to show how they should be disposed and defended.

We will now proceed to lay down the principles to be observed in attacking them.

Attack of Winter Quarters.

This operation is undertaken either with the intention of really attacking some of the quarters of the enemy, or of disturbing him by continual alarms, or lastly, with a view of forcing his positions, and destroying his army by attacking the corps composing it, before they are able to unite.

The same rules are applicable to these different cases.

If the attack is made with the view of gaining possession of one or more of the enemy's stations, the best mode of succeeding is by attempting a surprise.

But before undertaking this, a knowledge of the enemy's quarters must be obtained, as well as of their extent, and their facilities for assisting each other, the points of "appui" of their flanks, the obstacles covering their front, and the roads by which they may be most easily reached: it must be known whether it will be necessary to pass any defiles, rivers, or marshes: whether the chain of posts and guards is well or badly formed, and if the patrols and detached parties look well to their safety.

From these considerations, the plan of the surprise is arranged, and at the same time the enemy must be put off his guard, or must be deceived by feigning other designs.

All the measures relating to the assembly of the troops and their advance to the attacks, must be combined and arranged with accuracy and the greatest secrecy.

When the moment for their execution has arrived, the utmost diligence is required; the march must be made rapidly, and in the most perfect order; the detachments and advanced posts of the enemy must be cut off; the attack must be vigorous, and as soon as an entry into the quarters has been effected, all the advantages proposed or which circumstances may permit must be realized,

Whilst these attacks are being made, the nearest stations of the enemy must be engaged by demonstrations and false attacks; by alarming at the same time those at a distance, the reserves will be in a state of uncertainty and irresolution.

The quarters being attacked in front, detachments are sent to turn them and fall on their rear, so as to stop the enemy's reserves, and at the same time to cut off the retreat of the troops which may have been forced to retire.

Precautions must be taken with respect to the enemy's reserves which might, by coming up opportunely from a point in the rear, make their attacks with advantage.

Any station which is carried with the view of assuring one's own position, should be occupied and maintained, for the enemy might otherwise return to it, when the advantage expected from the success of the operation would be lost.

Should there be any station which it is desirable to prevent the enemy from occupying without holding it oneself, it must be one so situated as to be easily surprised, and difficult for the enemy to maintain, otherwise it would not be easy to force him to abandon it entirely.

When a station has been carried which it is wished to maintain, the most efficacious measures for that purpose must be at once taken, and with that view the attacking

party should be accompanied by the pioneers. If on the contrary, the object is merely to drive out the enemy, it would be dangerous after having succeeded, to risk a second encounter with fresh and more numerous troops; a prompt retreat should be made so as not to give him time to come to the support of the force which has been beaten.

When attacks are made merely with the view of disturbing the enemy by constant alarms, care must be taken not to harass one's own troops by too great exertions.

Operations intended to cause constant annoyance to the enemy's stations, are more easily carried on in a very broken country; but one's own quarters should first be made safe from any *coup de main*, being either protected by good entrenchments, or occupied by strong garrisons.

Amongst the skirmishes and false demonstrations some real attacks should be made, and some daring enterprises undertaken, which will keep the enemy in a constant state of alarm.

When the object proposed is to force the position covering the enemy's army, and then to attack the army itself, an accurate knowledge of the position is necessary, as well as of the extent and strength of the quarters; the enemy's points of rendezvous should be ascertained, and the time in which all his forces can be assembled.

In such cases good spies are very useful; but it is not enough to know what goes on in the adversary's camp, the greatest precautions must also be taken to deceive his emissaries, so that he may remain in ignorance of any projected enterprise, or may not hear of it till too late.

In order to surprise an enemy's army in its quarters, it should be known in what manner it is fortified, what is the number and intent of its entrenchments, how its flanks are protected, what obstacles cover its front, and what are the advantages and defects of its situation. It is equally essential to have information of the number and description of the enemy's forces, of the dispositions of his guards and advanced posts, of the usual routes followed by his detach-

ments and patrols, and of the nature of the ground to be traversed before reaching him. This information is indispensable in order to arrange a judicious plan of attack, and to make the proper dispositions.

The army should be assembled in rear, while the troops in the position itself remain quiet, and all communication is strictly prohibited; the troops from the furthest stations proceed to their place of rendezvous by forced marches, and those whose quarters are nearer join them.

If all the troops are not required at once, time may be gained by letting them form in two or three lines at intervals of a day's march.

The advance must be circumspect and rapid, the attack unexpected and vigorous; the enemy must never be allowed time for reflection, nor for keeping up a fire of musquetry, but the affair should be decided by the bayonet. Artillery should only be used when points can be found whence it would protect the attacking party without in the slightest degree impeding the rapidity of their advance. The order of battle should depend on the information that may have been procured respecting the positions occupied by the enemy.

The following three principles should never be lost sight of:—1st The attack must be made with corps combining in the highest possible degree firmness and celerity; 2nd The different arms should be made to afford each other mutual assistance and support; 3rd The troops should be so disposed as to cover and protect their own flanks without trusting to any other defence.

In order to force the enemy's position, the attacking army should be assembled in its own, and then the troops destined to lead the attack should advance, endeavouring principally to clear the ground for a space of five or six miles in breadth, so as to open the road for the army.

While the position of the enemy is being forced by the advanced corps, the army should march on his place of

general rendezvous, and by means of detached corps should surprise and carry the stations in its vicinity.

In carrying this enterprise into execution, the enemy should never be allowed time to reform, nor should the attacking party rest contented with any advantage gained, however great, as long as anything remains to be done.

The most favourable time for such enterprises is by night, as the enemy may then be most easily deceived; and the real and false attacks being made at the same time, the last will produce nearly the same effect as the first; for the troops at each station will think that the real attack is directed against them, and while all are in fear and uncertainty the decisive points may be reached: the front line once broken and exposed to a flank attack, is routed before the army acting on the defensive has been able to ascertain the dispositions of the enemy.

Whenever the attack of an army in winter quarters is determined on, a surprise should always be attempted.

If the enemy is able to gain sufficient time to assemble his army, and make his dispositions to receive the attack, the enterprise may be considered as having failed, even supposing some advantage to have been gained; for though beaten, he may make a vigorous resistance; whereas, had he been in the first attack dispersed and thrown into disorder, the most important results might have been secured. In such a case then it would be more prudent not to persevere in the undertaking than to obtain merely a partial success at the expense perhaps of unfortunate consequences.

We will now consider the case in which the enemy, having ascertained that an attack against his quarters is projected, has had time to make his dispositions for defence.

The best mode of acting in such a case, and the comparative advantages of attacking or retreating, depend on a variety of circumstances, which it is more easy to consider beforehand than on the spot.

The course to be pursued will depend on the comparative strength of the attacking party and of the enemy; on the

position he occupies, the features of the ground, and the facilities and impediments they present; on the importance of the enterprise, and the advantage expected to result from it.

Still a retreat should not be decided on, unless there are very urgent reasons for so doing; such failures make a bad impression on the minds of the men, and may be attended with more unfortunate results than a real repulse.

Should a retreat be absolutely necessary, some plausible pretext may be assigned; and the troops should be induced to think that nothing has been done but what was really intended; that the advance was merely a feint to deceive the enemy, by directing his attention from the principal object; and as all contingencies should be provided for, and more especially the retreat, this may be really turned to account as a ruse, and may be thus made to compensate in some measure for the failure of the real object of the enterprise.

Surprises of quarters often prove decisive blows, and are always a resource for the weaker party; their execution is seldom impeded, when the precautions above mentioned have been taken, as well as those required by peculiar circumstances.

When the position of the enemy has been forced, and his army completely beaten, winter quarters should not be resumed, unless when absolutely necessary; for it would be injudicious after so propitious an opening of the campaign to allow the enemy to unite his forces, and commence offensive operations.

It may be thought at first sight that in treating of the establishment of an army in winter quarters the limits of this work have been passed; but as all officers in the field are more or less concerned in the necessary arrangements, and those of the Quarter-Master General's department are especially interested in them, the subject could not with propriety have been omitted.

THE END.

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VIII. & IX. Field Sketches of a chain of Out-posts from Bow Hill to Rooke's Hill, facing towards Chichester, occupied by 3rd Battalion Grenadier Guards, drawn by Lieut.-Col. the Hon. G. Cadogan, and Capt. and Adj. Prince Edward of Saxe Weimar.

X. Position of observation as Out-posts in front of Chilgrove, Sussex, held by 69th Depôt, commanded by Major Mackirdy.

XI. Map of Country between the Coa and Agueda rivers.

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